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BRIGHTON
AND ITS
SANATIVE RESOURCES
BY
EDWIN LEE



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BRIGHTON

AND ITS

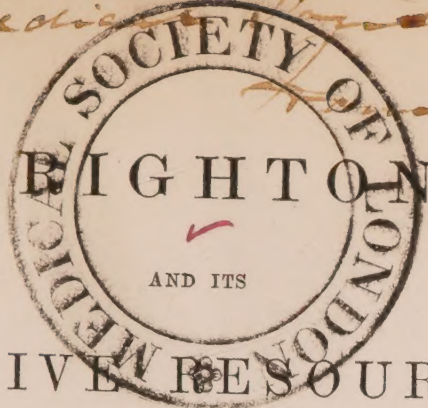
SANATIVE RESOURCES.

REPORT

ON

THE STATE OF THE

The Medical Society of London
from the Author



BRIGHTON

SANATIVE RESOURCES;

COMPRISING A SPECIAL REFERENCE

TO THE

GERMAN SPA.

OBSERVATIONS ON

ARTIFICIAL MINERAL WATERS, BATHING, AND
SEA-BATHS.

BY

EDWIN LEE,

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P R E F A C E.

THE great importance of Brighton as a place of resort for health as well as for recreation, and the opportunities which I have had of appreciating its advantages for some years past during the periods of my sojourn in the autumnal and winter months, have induced me to publish the present small work, which, in the absence of any similar one, may possibly be acceptable to some of its residents and visitors, especially if desirous of more detailed information respecting the efficient remedial means which Brighton alone possesses in this country.

Although the general remarks on these agents, as also on bathing and sea-baths, have already appeared in another work, they cannot, I conceive, be more appropriately introduced than in this place. I have availed myself

BRIGHTON

AND ITS

SANATIVE RESOURCES

&c.

BRIGHTON, though for centuries existing as a fishing town or village, is of recent origin as a place of resort. About a century ago Dr. Russell, a physician of some eminence directed public attention to it in a treatise on sea-bathing, and a few visitors frequented it for this purpose in the summer season. There was then no road between Brighton and London, the ordinary means of communication being by pack-horses, and in winter, says a local guide, even the tracks which these followed were impassable. The number of its visitors, however, gradually

increased, and in 1760, it had already obtained a certain degree of reputation among the upper classes of society as a watering-place. Dr. Relham, who visited it annually, published a "Short History of Brighton, with remarks on its air, and an analysis of its waters," in 1761; which was re-edited by Mr. Michell in 1829; and this appears to be the only medical topography extant. The remark of Chief-Justice Wilmot in 1763, "Of all the public places I have seen, I like none so well as Brighthelmstone," is prefixed as a motto to the work. The town is therein described as being situate at the bottom of a bay, formed to the east by Beachy Head, and by Worthing Point on the west; built on a rising hill, having a south-eastern exposition, and defended on the north. The soil here and over all the South Downs is a chalk covered with earth of various kinds and depths; the grass of fine texture, containing aromatic plants, whence the sweet flavour of the mutton. No marshy swampy soil, and the nearest river being six miles off." The town then consisted of "six principal streets, many lanes, and some spaces surrounded with houses, called by the inhabitants squares, the houses being built with flint stones from the shore."

In 1780, the population amounted to 3,600 souls. There was then a theatre; two years later the Prince of Wales paid a visit to his uncle, the Duke of Cumberland, then sojourning at Brighton, and from this period its prosperity rapidly increased.

The advantages of the position of Brighton, as the nearest point of the coast to the metropolis, have become more and more appreciated by Londoners, as well as by residents in different parts of the kingdom, especially since its greater approximation allows it to be considered as a marine suburb of the capital.

Brighton lies for the most part on the southern side of a range of hills, (the South Downs,) by which it is protected in great measure from northern and easterly winds, but is fully exposed to the sea-breezes from the opposite quarters. The resident population amounts to upwards of 50,000 inhabitants. The buildings extend in a now continuous line from Kemp Town, along the east cliff to the Steyne, and thence along the west cliff to Adelaide Terrace, altogether a distance of three miles. These portions are connected by a modern road projecting seawards, and protected by numerous groynes on the beach, and by a wall (the Junction Parade).

The aspect of this magnificent range of building,—for the most part white stuccoed houses,—from the sea is highly imposing.

From the shore numerous streets are continued a considerable distance inland. The first object which attracts the visitor's attention on arriving by railroad, is the handsome church of St. Peter, erected some years ago in an open space at the northern extremity of the town, and the junction of the high-roads to London and to Lewes. Behind are some public grounds recently planted, though but little frequented. The houses at this part, Hanover Crescent, &c., are comparatively small; on advancing, however, the state of the buildings improves on either side of the spacious enclosures planted with trees; St. George's Place, the Grand Parade, Marlborough Place; up to the north entrance to the Pavilion grounds, on the left of which, the Grand Parade and Pavilion Parade larger class houses are continuous with the Steyne, whence the pinnacles and domes of the Pavilion are seen to great advantage. On the eastern side of the Steyne, the range of houses extending to the Marine Parade, is adapted to the reception of a superior class of visitors; this position being by many considered the

most desirable in Brighton. On the western side, which is a good deal sheltered from the north by the Pavilion, the houses are of a smaller class. The area is occupied by broad pavements and roads, and two inclosures, on which stand a statue of George IV., and a fountain recently erected, which however seldom plays for want of a sufficiency of water. To the south, excluding the sea view, is the pile of building constituting the Albion Hotel and the Literary Institution. The streets in the interior, running parallel with the cliffs, are mostly occupied by shopkeepers, and in their animated movement present the aspect of a capital. North Street extends westwards from Castle Square, which opens out upon the Steyne, for about half a mile, terminating by a gradual ascent in the Western road, which is continued for a considerable distance in the same direction. The Queen's Road to the right at the top of North Street leads to the Station; another road up the hill leads to the ancient parish church of St. Nicholas, which formerly constituted a good sea-mark, being perceived from afar. Clifton Terrace, and other ranges of buildings, have recently been erected in this north-western part. Between the line of North Street and the Western road, and that of the sea

(King's Road), the chief connecting media are East Street, opposite the south entrance to the Pavilion in Castle Square, (where are some of the best shops,) Ship Street, West Street, Cannon Place, Preston Street, and the Montpellier Road. Three small squares, (Clarence, Norfolk, and Russell,) and three large ones, Bedford, Regency, and Brunswick, lie between the Western road and the sea. These two last-named consist entirely of first-class residences, and are among the best situations in the town. The Brunswick is somewhat objectionable for delicate persons in winter on account of the gap to the road at its upper part, allowing free passage to northerly winds, from which the Regency, being enclosed, is comparatively sheltered. From both these squares an extensive sea view is obtained. The former opens out in the centre of Brunswick Terrace, (consisting also of first-class residences,) facing the sea and terminating at Adelaide Terrace,—this being the western extremity of the town,—the houses of which being on raised ground are more exposed to gales of wind, but are cooler in summer.

From Brunswick Terrace a continuous line of buildings of irregular form and size extends along the King's Road for more than a mile to

the Steyne. On the fine esplanade between the road and the beach, is the usual promenade for this portion of Brighton ; opposite are Oriental, Silwood, and Cavendish Places, consisting of private residences and lodging-houses. During the season the pavement along the west cliff in an afternoon is as crowded as some of the leading streets of London, while the road itself (along the whole extent of both cliffs) is thronged with carriages and equestrians. In this part are many of the most attractive shops.

The Marine Parade is continued from the Steyne and the Junction Parade, along the east cliff, and consists of private residences and lodging-houses of a superior class, there being no shops along this line. This is considerably higher than the west cliff; the foot-pavement and the road are also much wider. The former encroachments of the sea have been effectually guarded against by the sea-wall, constructed at an expense of £100,000, and completed in 1838. It extends nearly two miles, viz., from Middle Street to Kemp Town. The Royal Crescent houses are the oldest in this part, but do not yield in point of comfort and accommodation to more modern erections ; among which may

be specified the magnificent row of lofty houses termed Eastern Terrace; the so called Snake-houses; and the recently finished Perceval Terrace, lately built upon the intervening ground between Brighton and Kemp Town, of which the principal portions, Sussex Square and Arundel Terrace, present a striking appearance seen from the sea or from the opposite part of the Esplanade, which extends the whole distance to the Steyne, and is of considerable breadth, so as to admit the free passage of several wheel-chairs and pedestrians, if collected at any one spot. At intervals commodious seats are erected, projecting over the sea-wall. Opposite Kemp Town is a lower esplanade, sheltered from the north, to which the access is not so public, being more restricted to the residents of this quarter. The open places on this Parade, inclosing areas with grass-plots, trees, and shrubs, are the New Steyne, Rock Gardens, and Marine Square, which situations are in great request by families requiring moderate sized residences,—less exposed to the heat and glare of the Parade in the warmer months, and to south-east and south-west winds, in winter and spring.

Of the streets diverging from the Parade, it

will suffice to mention German Place, Bloomsbury, Belgrave, and Portland Places. Behind, and parallel with the Parade, extending from the New to the Old Steyne, is a street of shops (St. James); and behind Rock Gardens Little Rock Gardens, are continued up the ascent to Egremont Place, (a street of smaller houses,) which terminates at the park, (which is closed to the public,) and the German Spa, where the various artificial mineral waters are dispensed to patients, who, in the intervals of drinking, promenade the pump-room and grounds.

Directly opposite the New Steyne is the Chain Pier, to which a flight of steps leads down, the principal entrance being opposite the Old Steyne, whence a broad esplanade conducts to the pier. This is the only public place of out-door reunion; musical bands playing on stated days on the pier head, as (also, occasionally, in Regency or Brunswick Squares.) From this point the best view of the town may be obtained—the greater portion of the line of building on both cliffs being visible; as also, on fine days, the whole extent of coast to Beachy Head eastward, and to Shoreham and Worthing on the west. The packets to Dieppe usually take and land passengers at the pier. The passage is, however, now more fre-

quently made from Newhaven, which is accessible in all weathers, and is about five miles nearer. The *trajet* in the new boats takes about five hours, that from Shoreham to Havre between six and seven. This route to Paris, passing through the finest part of Normandy, is much frequented in summer.

Among the edifices the Pavilion must first be specified, more especially since having been purchased by the town, it has now become public property. It was contemplated by some to have the building destroyed and houses erected on the ground; this idea has, however, now been abandoned, and it has been justly determined that the structure shall remain, and, as heretofore, constitute a characteristic feature of Brighton,—the peculiar oriental style of its architecture producing a pleasing effect. The interior, besides a great number of small apartments, contains a Chinese gallery, 166 feet long; a music-room, with a dome 30 feet in diameter; a large banqueting-room, and a rotunda. The purposes to which these, with the extensive stables, will be applied, has not yet been determined upon; the opportunity, however, is now afforded of furnishing visitors and residents with a central point of reunion, which was much wanted at Brighton,

and which other first-class watering-places, especially on the continent, possess. Many visitors, being deprived of the resources of home, find the evenings, especially towards the close of the year, hang heavy on their hands, and would greatly prefer being able to resort to a well-lighted saloon, provided with music, singing, or some other kind of recreation, and where they might associate with others and meet acquaintances, than to occupy themselves solitarily with a novel, or *en famille* at their lodgings. Any one of these apartments would form an admirable pump-room for the German Spa, the existence and purposes of which are now unknown to a large proportion of the health-seeking population; and the distance at which the establishment is situated from the centre of the town, is objected to by many, who would gladly avail themselves of its resources, were it more centrally situated. There are, however, reasons against, as well as for, the removal of this establishment, which in all other respects fully answers all its intended purposes, the pump-room being commodious; the grounds judiciously disposed, and having a cheerful prospect of the park, from which they are separated only by a railing.

The possession of the Pavilion grounds by the town is an immense advantage to residents and visitors, particularly in the summer months; the deficiency of trees in Brighton and the environs being one of its greatest drawbacks at this season. In another work (the Watering-places of England) I had already adverted to this deficiency, observing that in "summer the sun's rays being reflected from the cliffs and white buildings, render the heat oppressive;" and that "Brighton is deficient in promenades, the absence of shade and verdure (which are especially coveted by Londoners escaping for a time from their avocations) is severely felt in the hotter months, at which period many of the residents absent themselves." This point I endeavoured to impress upon public attention at the time when the discussion was going on as to whether it would be advisable or not for the town to purchase the property.

The Town Hall, a large and handsome isolated edifice, with porticos, completed in 1830, contains a spacious assembly-room on the first-floor; where public meetings are held, concerts, lectures, and panoramic exhibitions are not unfrequently given; besides several smaller apart-

ments for the transaction of commissioners' or other business connected with the town. Adjacent is the extensive and commodious market-place.

Next to the parish churches already named, Christ Church, distinguished by its tapering spire, in the Montpellier Road, is the largest. A new church has likewise lately been opened at Kemp Town. The principal chapels connected with the Established Church are, St. George's, near Kemp Town; St. Mary's, at the top of St. James's Street; St. James's Chapel, in the street; the Trinity, Ship Street; the Chapel Royal in North Street, and St. Margaret's. The Roman Catholics, and various dissenting sects, have appropriate places of worship in different parts of the town. These are all well filled on Sundays, it being frequently difficult for visitors to obtain seats, unless secured in the week-day. The clergy, as a body, are zealous, several being distinguished as preachers, especially in the chapels where the voluntary system prevails. At one, the Chapel Royal, the objectionable system of taking money at the door, at the commencement of the morning service, is continued.

The benevolent and charitable institutions at Brighton are numerous, as may be expected in a place of this size, and are well supported by the

inhabitants and visitors, to whom appeals are frequently made from the pulpit. The Sussex County Hospital is a new and commodious building, in a detached elevated position, at the eastern outskirts of the town. It contains upwards of 100 beds. The wards are clean and well ventilated, and the internal disposition, as regards the welfare of the patients, leaves nothing to be desired. Numerous medical and surgical out-patients obtain relief on stated days; operations of importance are not unfrequently performed; chloroform being always used, (as, indeed, throughout the kingdom,) by which the sensibility to pain is destroyed. Not far from the hospital there is a Deaf and Dumb Asylum. There is, likewise, a good Eye Institution in the Queen's Road; and the newly erected Dispensary near the railroad has lately been opened.

Brighton is not deficient in resources for mental recreation. It formerly possessed two clubs; these are now amalgamated into one at the large white house on the western side of the Old Steyne. The whole of the first floor is taken up by the reading-room, which is conveniently fitted up, and is well supplied with the leading journals and periodicals; and whence may be enjoyed the prospect of the movement on the Steyne.

with an extensive sea view. On the ground-floor are the dining and refreshment-room, and the card-room. The upper portion of the building is disposed in bed-rooms for the accommodation of members by the night or week. Many of the most influential residents, as also members of the London clubs, are members: the admission being by ballot.

The Albion Rooms, also on the Steyne, belong to the Literary and Scientific Institution. They are spacious, well supplied with the periodical literature, and weekly lectures are delivered on scientific or other topics of general interest. Visitors are allowed to subscribe for the short period of three months.

The Athenæum, in West Street, has likewise a well-supplied reading-room for the advantage of clerks, tradesmen, or others. The management of this institution engages, during the season, lecturers of the highest reputation, the lectures—which are free to members—are delivered in the large room at the Town Hall. An analogous institution has recently been formed for the working classes, and is likely have a beneficial result.

The libraries in various parts of the town contain for the most part works of light literature and

fiction. Folthorp's in North Street, is the best, and comprises several thousand volumes in history, travels, theology, and fiction ; all new works of any repute being added as soon as published. The reading-room having been recently enlarged, is now the best public room in the town. King's library, on the opposite side of the street, is restricted to the sale of books. Grant, in Castle Square, has a good reading-room (where are received several of the foreign papers,) and a circulating library. At Gancia's, in the King's Road, French, German, and Italian works, may be obtained for perusal. Three weekly newspapers are published in the town.

The theatre, though small, is convenient, and the performances in general are well got up. It has not, however, proved a profitable speculation, being but indifferently attended, except on particular occasions when performers of high reputation appear. At the Newburg Rooms, in Cannon Place, musical, conjuring, and other entertainments are not unfrequently given.

Among the hotels near may be specified the Old Ship, which contains the public ball-room ; the Bedford, the largest first-class establishment in Brighton ; the Norfolk on the west cliff ; the York, the Albion, on the Old Steyne ; the

Gloucester, near St. Peter's church; the Albemarle, (boarding house,) the New Steyne, the Bristol, the Pier, on the east cliff. Numerous other hotels and boarding-houses exist in various parts of the town, affording to visitors a choice of accommodation according to their tastes and circumstances.

Brighton has the advantage over most other places of resort in possessing several bathing establishments, where fresh, sea, or medicated water, as well as vapour baths, may be had. There is likewise a large public circular bath for swimming, where this art is taught. The practice of shampooing, in addition to the bathing, is more general at Brighton than elsewhere, and is a very efficient means of procuring the removal of contractions of the limbs, rheumatic ailments, muscular rigidity, &c.

For bathing in the open sea, machines are placed in chosen spots along the beach, which, however, in some places is shingly and steep, requiring precaution on the part of those who are not swimmers.

From the salubrity of the position and other advantages of Brighton, there are several well-conducted educational institutions. The proprietary college founded some years ago has been

the means of inducing several families to take up their residence in the town. The building is newly erected, in a detached position, not far from the hospital, and is entirely occupied by class-rooms. The pupils board with the masters, or in appropriate boarding-houses.* The establishment is superintended by a Principal. The masters are for the most part clergymen of the Established Church. Modern languages, as stated in the prospectus, constitute a part of the course of study ; and in fact, in recent establishments of this kind, the system of education has been less exclusively classical than that adopted in the public schools. The great error of a too exclusive attention to subjects in which few young people feel any interest, to the neglect of more available general information, has become apparent of late years ; more so indeed, ever since an illustrious personage gave a very strong hint to this effect by establishing at Eton a prize for proficiency in modern languages ; and considerable alterations have been and are further about to be effected in the public schools and universities. The Prince, doubtless, could not fail to contrast the inefficient prevailing system in the education of the upper class of young

* The number of pupils now amounts to 183.

men in England, with the more complete one pursued in his native country, where attention to the classics is by no means neglected. The evils of this system have been manifold ; it has incapacitated many Englishmen fresh from the universities from conversing upon any except the most common-place topics ; and the deficiency has been frequently painfully felt, when at home or abroad they have been thrown into the society of well-informed men of their own age of France or Germany ; and thus the taciturnity with which the English are so generally charged by foreigners, ascribing it to *hauteur*, might with greater reason be ascribed to another cause. A more serious effect has been that of the large proportion not compelled to engage in occupation, and who have had in early life the means of indulgence afforded them, many on attaining an age when pleasure loses its chief zest, and when there is less inclination to engage in active pursuits, have found themselves destitute of mental resources in a climate where activity, mental or bodily, is requisite for the preservation of health ; hence the gloom and ennui with which so many are afflicted, and which have been too commonly attributed to our cloudy skies, foggy atmosphere, &c., as the sole cause.

Hence also the characteristic desultory love of travel ; and in fact nothing is better calculated than change of scene to relieve for a time this irksome condition which causes a large number of our countrymen to prefer a residence abroad. This short digression is perhaps not out of place here ; so many who from this cause fall into bad health being naturally induced to have recourse to the resources which watering places present.

There is comparatively little to interest in the environs of Brighton, which are for the most part extensive downs, unattractive in aspect, but well calculated for horse exercise, which is, perhaps, nowhere more in vogue than here ; cavalcades of ladies, escorted by their male friends, or by riding-masters, being daily seen along the cliffs and roads near the town. The Earl of Chichester's park (Stanmer), on the Lewes road, to which visitors have access, and the Dyke, about five miles distant, in an opposite direction, whence may be enjoyed an extensive prospect of variegated country, are the localities most frequently visited. The usual carriage drive is along the cliffs, between the sea village of Rottingdean, about four miles beyond Kemp Town, and Hove, a mile west of Brunswick Square, which possesses a neat church, resorted to by

visitors on Sundays. Portslade is also a prettily situated village in this direction. Shoreham is about five miles from Brighton, and is reached in a quarter of an hour by rail. The Swiss Gardens, where musical, pyrotechnic, and other entertainments are frequently given, are much resorted to by holiday-folks. Worthing is twelve miles distant, and is a good deal frequented in the bathing season. The environs of the county town, Lewes, are interesting, and the visitor may be gratified in devoting a morning to viewing its ruined castle and antiquities.

At Wick, in the immediate neighbourhood west of Brighton, is a chalybeate spring, which is drank by some of the summer visitors. A pint of water contains, according to Mr. Daniell's analysis—

Sulphate of iron	. . .	1.66
„ „ lime	. . .	1.78
Muriate of lime	. . .	1.71
„ „ magnesia	. . .	0.44
„ „ soda	. . .	1.36

6.95 grains.

Carbonic acid gas . . . 2 cubic in.

This water would suit some persons requiring tonics, but would not be adapted to very weakly

individuals, or whose stomachs are very delicate, to which the gaseous chalybeates of the German Spa would be more applicable.

There are, properly, two seasons at Brighton, from the end of June till October, and from October to March, houses being generally taken at this season for four or six months. From the middle of March until July the cliffs have a comparatively deserted aspect. In summer the heat and glare to which the houses facing the sea, along the Marine Parade and King's Road, are exposed, are often extremely oppressive in the middle of the day, though somewhat tempered by the sea breezes. The mornings and evenings are, however, delightful. The best parts, at this season, for those who prefer the more inland localities, are the higher squares; the western road; the upper portion of the Montpelier Road, to the west; Dorset Gardens; Upper Rock Gardens; Egremont Place; Bloomsbury Place; Portland Street, to the east; the Grand Parade; Gloucester Place; the east side of the Steyne, in the central portion. Among the more sheltered positions, in winter, may be mentioned, Russell Square; Cannon Place; Silwood Place; the Western Cottages; Oriental and Cavendish Places: these latter contain

good houses, and are not ineligible localities for invalids, though more exposed to sea gales than the before-mentioned. This disadvantage attends the whole line of houses along Brunswick Terrace, the King's Road, and Marine Parade, and is at times felt as a great inconvenience. These localities have, however, the compensation of being fully exposed to the sun's influence, from which some of the before-mentioned are partially exempt. Of the squares—the New Steyne, Marine Square, and Regency, are much less exposed to winds than the Old Steyne, and especially the Brunswick, on account of its being open at the upper part, constituting a perpetual draft, whether the wind be northerly or from the sea. The East Cliff and Kemp Town houses are much more exposed than the comparatively sheltered portion of the West Cliff and King's Road, though preferable to those who require a bracing air, and who are not liable to be affected by variations of temperature. The Grand Parade, especially its upper portion, is fully exposed to the northerly current of air sweeping down the valley, from which the Pavilion Parade, and the eastern side of the Steyne, are in great measure sheltered by the projecting houses.

Much caution is required, on the part of in-

valids, as also of those in health, in guarding against the great atmospherical variations in different parts of the town. "There are few towns," says the most recent local guide, "where the atmospheric changes are more rapid, or where greater diversity of heat and cold may be met with, according as the visitor directs his footsteps to one part or another. Thus, with a fresh breeze from the south or south-west, the sea-front of the town will be, even in the middle of winter, as brilliant as an Italian landscape; whilst, probably, the northern part of the town is dull and murky. On emerging from East Street, Ship Street, or West Street, the visitor is surprised and delighted to come upon another world—brilliant, clear, and sparkling. It is, however, on a severe winter's day, when the wind sets keenly from the north, and the sky, though clear, looks cold, and the sun, though undimmed, is powerless, that the greatest contrast is presented in the atmosphere of the town. At the north all the characteristics of winter are to be met with; cutting wind, bleak sky, powerless sun, chattering teeth, and red noses. Proceed to the cliffs—get under the lea of the Marine Parade, or the King's Road, and, lo! you are in a summer clime. The sea looks

warm and comfortable—the land is gay and animated. You might say it was spring, or summer, or autumn, anything but what it is—cold, bleak, stern winter!

“ It is not always, however, that the sea-front is the favoured quarter, and not unfrequently the hardiest promenaders care not to face the boisterous gales that sweep along it from the south and south-west. It is then that the north is resorted to for quiet and shelter, and the stream of carriages pours along the Lewes and London roads, both of which affords agreeable inland drives. There is one quality which Brighton possesses in a greater degree than perhaps any other town, that is, dryness. No sooner does it cease to rain, than the pedestrian may issue forth and traverse the town, almost without fear of soiling his boots. Well drained, both by nature and art, for everything runs quickly off a chalk soil into the sea; beautifully paved, and the roads well scavenged, a rainy day has only the effect of making the town cleaner, and under the combined effect of sun and air, frequently all traces of wet will have disappeared within a few minutes after the cessation of rain. If there is any natural disadvantage under which Brighton labours, it is that of dust; but this inconve-

nience is met with vigorous measures of resistance by our local authorities." *

Dr. Relham, in his work already quoted, observed that, " In summer the sea breeze prevails, which rises and dies away with the sun ; and the warmer the day the more cooling and refreshing is the breeze." In winter, with respect to frost and snow, the former happens sufficiently often to add to the health of the inhabitants ; it is sharp while it lasts, but its duration is short. The latter frequently falls, but seldom continues on the ground above a day or two ; the warmth from the sea and the south-west winds which prevail soon dissolve it. The effects, therefore, produced here, either by heat or cold, are too immaterial to be pernicious. " The south and south-west winds, which blow from the sea, appear, according to the custom-house data, to prevail about three-fourths of the whole year. The inhabitants of Brighton are remarkably robust and free from every pulmonic difficulty ; and the consumptive and asthmatic, by repairing here, find considerable relief from the excellency of an atmosphere that varies gradually, united with the medicated vapours of sea water."

Alterations as to climate, &c., have necessarily

* Illustrated Handbook of Brighton and its Environs.

taken place since the above observations were made, though, in the main points, they are corroborated by the more recent report of Dr. Jenks to the Poor Law Commissioners in 1840. Mr. Wigan published a *brochure*, "Brighton and its Three Climates," a few years ago, but it did not enter upon the consideration of the subject in a professional point of view, nor did it seem to me to convey any material additional information. He refers to the more confined and smoky air of the central portion, states that the west cliff is more of a clay soil covered with pebbles, the east being chalk,—recommends the avoidance of sea and spring winds, the absence from Brighton in March, and states that its climate is prejudicial in congestive diseases and inflammatory dyspepsia.

Dr. Jenks, quoting Mr. Lewis, observes, that the mean temperature (from August, 1837, to August, 1839) of the two years is 55° ; that of the spring being 53° , of summer 66° , of autumn 56° , and of winter 43.5° .

"The observations which follow (from the custom-house log-book) refer to the last two years. The first thing which strikes one is the remarkable equality as to rain and fine weather, and as to the prevalence of certain winds. The

chief variations are to be found in the seasons, as was before observed, with regard to the thermometer. Thus, in one year there were 205 fine days, in the other 207. In the one 156 days with rain or snow, in the other 166. Easterly winds prevailed for 116 days in the former, for 123 in the latter year. In like manner, south-westerly winds were as 148 in the one, to 152 in the other. The proportion of westerly to easterly winds for the two years, was as 1·75 to 1 ; of rainy days with westerly winds, to rainy days to easterly winds, as 2·5 to 1. Calm days are rare, except when the wind is from the north. Light breezes occur upon an average once in five days. Hence, there is a great prevalence of strong breezes, with frequent gales, chiefly from the south-west."

Easterly winds, particularly north-east, are the most frequent in winter and spring ; west and south-west in the summer and autumn.

Epidemic and endemic diseases are of comparatively infrequent occurrence. The hospital returns for two years show that typhoid fever, bronchitis, phthisis, and rheumatism, were in by far the greater proportion to other diseases. Of the latter, 39 cases among residents, and 32 among strangers are stated. Of typhoid fever,

24 cases among residents, and 6 among strangers ;— a small number compared with other towns of equal population. Bronchitis, 15 cases among residents, 9 among the strangers admitted. Phthisis is said to be more prevalent among certain classes of the population. In the hospital returns are 15 cases among residents, and 12 among strangers. The larger proportion, however, of these cases are not admitted to the hospital, but are treated in the badly-ventilated residences of the poor. Dr. Jenks states his opinion that, among the permanent residents the rate of mortality from this cause is as 1 to 7 ; the class of labourers suffering in greatest proportion. The lowest mortality, on the other hand, from this disease, is among sailors, fishermen, and others engaged in maritime occupations. In the registers the calling of every patient is specified, but within the above-mentioned period there was no mention of “ fishermen ” under the heads of “ consumption ” or “ phthisis.” Three deaths are recorded from phthisis among sailors, and 29 among labourers.

Brighton was not exempted from the visitation of the cholera last year, but the deaths were not numerous.

Dr. Jenks refers to the imperfect drainage and

ventilation of certain localities, as a principal cause of disease among the lower classes, and the same circumstance is referred to in Mr. Cresy's, (the superintending inspector,) recent report to the General Board of Health, (1849,) which states, that "Many of the houses are wretchedly damp, being constructed with inferior bricks and mortar, made of sea sand. No methods are adopted for getting rid of even the pluvial waters, and the walls are covered with lichens; so that, added to the want of drainage, a constant decomposition of vegetable matter is going on." The proportion of deaths to the population is stated as 1 to 42; the proportion of births being 1 to 38.

As respects the geological character of the district, Dr. Jenks' report states, that "the greater part of the town is situate on an accumulation of water-worn materials, of which the uppermost and principal is what Dr. Mantell terms the 'elephant bed.' This is chiefly composed of broken chalk, with angular fragments of flint, consolidated by a calcareous cement of a yellowish colour, constituting a hard coarse conglomerate. Beneath the elephant bed are shingles, then occurs a layer of fine sand, and lastly chalk. The elephant bed extends eastwards to

Rottingdean, westwards it dips towards the valley of the Steyne; on the other side it rises again, and covers the high ground of the western division of the town, becoming gradually thinner towards the coast. Beyond Regency Square it disappears, and its place is supplied by beds of loam, clay, brick-earth, and gravel."

The town is well supplied with pure water, mainly from a reservoir containing two millions of gallons, into which it is raised from the wells. The supply of provisions is also plentiful and of the best quality. House-rent and living, in the season, are rather expensive, the price of most articles not varying materially from that of London. There is a good deal of dinner and evening society in winter, though there are but few opportunities for the general associations which are afforded at smaller watering-places, and more distant from the metropolis. Numerous concerts, subscription balls, and other entertainments of a public character, take place at this season, and are generally well supported.

The bracing and restorative qualities of the air of the central and eastern portions of Brighton will be found eminently beneficial to those whose health has suffered from too close an application to avocation, a prolonged residence in the capi-

tal, or from various other causes; as also to most convalescents. Nervous invalids will, likewise, for the most part, derive benefit, selecting the locality most congenial to their feelings. For delicate persons, and those suffering from chronic inflammatory affection of the air-passages, as well as where there is a tendency to pulmonary disease, the west cliff and squares will be generally preferable in winter. On the other hand, scrofulous patients, and those of a torpid habit and languid circulation, will, for the most part, be more benefited by residing in the eastern quarter. Those, however, who are susceptible to atmospheric variations, and who require a mild genial winter climate, will do well to remove in the depth of winter, and especially on the approach of spring, to a more sheltered position; as Hastings, St. Leonard's, Torquay, Bournemouth, or the Isle of Wight. Rheumatic, gouty, and paralytic patients, will mostly be advantaged by passing November and December at Brighton, and then moving to one or other of the fore-mentioned localities or not, according as circumstances may indicate. To patients with a tendency to irritability of the digestive organs, the eastern part would not be well adapted for a prolonged sojourn. In the more atonic cases of

indigestion, a residence at Brighton, during the autumn and winter months, would be likely to be of great service.

“The climate,” observes Sir James Clark, “is singularly well suited to young persons, particularly females suffering from a deficiency of red blood, and the debility and deranged functions consequent upon, or connected with, such a state of the system. All derangements of the constitution indicating the use of iron, will be benefited in a marked manner; and in convalescence from acute diseases, and the debility consequent upon long confinement, no sea-side climate, with which I am acquainted, is to be compared with that of Brighton.”

On the other hand, persons of an irritable nervous system, or those subject to gastritic dyspepsia, with a dry irritable condition of the skin, will often find their complaints aggravated by Brighton. From the disposition to gastric irritation, experienced not unfrequently even by persons in health, on first arriving; invalids, and dyspeptics in particular, should adhere to a very mild diet, and comparative abstinence from wine and other stimulants.

ON ARTIFICIAL MINERAL WATERS.

THE acknowledged power and efficacy of mineral waters in the treatment of chronic disease, have at different periods occasioned attempts to imitate them, with a view to render this class of remedies of more universal application; but these imitations, owing to the imperfect knowledge of the chemical composition of the natural springs, and the want of proper apparatus, could scarcely be said to bear a resemblance to them, in their properties and mode of action, till the period when Dr. Struve, by unremitting perseverance, and at considerable expense in the construction of the requisite apparatus, succeeded in bringing artificial mineral waters to a high state of perfection, so as, in many instances, scarcely to be distinguished from the natural ones; and the beneficial effects resulting from the use of these waters at Dresden soon gave rise to the formation of similar establishments in other cities of the Continent, as

Leipsic, Berlin, Petersburg, Moscow, Warsaw, Königsberg, &c., which are annually frequented by numerous patients.

In the preparation of these compounds a complicated apparatus is required: to maintain in the waters the requisite degree of saline and gaseous impregnation, the proper degree of temperature, &c., a small thermometer is inserted in each water, and a person is constantly on the watch, to see that the temperature does not vary from that of the natural spring. Distilled water only is used, and the best analyses are so closely followed, that even minute portions of inert substances, as silex, are not omitted. As Struve justly observes in his work, "In a mineral spring, no constituent part is indifferent, and the smallest has its share in the general action, although it may, in itself, apparently possess no power."* It is not unfrequently seen with regard to pharmaceutical preparations, that when the supposed inert parts have been abstracted, the remedy is less efficacious than before.

Most unprejudiced persons acquainted with mineral waters admit that, as far as sensible properties are concerned, there is no material differ-

* Ueber die Nachbildung Kunstlichen, und Naturalischen Heilquellen.

ence to be detected between many natural springs and their prototypes. I have not had an opportunity of comparing the two kinds of waters together at the same time, but, as far as my recollection of the taste, smell, &c, of some of the principal ones, as Carlsbad, Kissingen, &c., serves me, I should say that the difference in these respects is very slight. The majority of physicians at the various baths, however, who are naturally strongly opposed to artificial waters, assert that, even though there may be no very perceptible difference in their physical properties, yet the natural springs are much more efficient in their action on the economy; which, however, in the present state of matters, it would not be easy to ascertain, as no accurate statistical information of the effects of the natural springs can be obtained; owing to the partial statements put forth in favour of the individual ones, while seldom is any report made of the unfavourable cases. Several German practitioners of eminence, as Doctors Von Ammon, Hedenus, Horn, Kreysig, Rust, &c., who have had frequent opportunities of testing the merits both of natural and artificial waters, are of opinion that, looking to the water alone, with regard to its internal administration, the artificial are equally efficacious

with the natural waters ; whereas other practitioners, whose names stand equally high with the preceding, as authorities on mineral waters, as Hufeland, Osann, Carus, Wetzlar, &c., consider the former to be inferior to the latter, though they allow that they have great analogy with them, may be regarded as an efficient substitute, and are well calculated to render great service in the treatment of chronic diseases.

Some of the artificial mineral waters are better adapted for being sent to a distance than the natural ones, especially such as contain a large proportion of carbonic acid and iron. Chalybeate waters exported far from the spring, or if kept long, become decomposed, and the iron is precipitated ; but it remains longer in suspension in the artificial waters. Those of Spa and Marienbad, which I took for the purpose of examination from the establishment at Brighton, retained their taste, and a considerable proportion of their gas, for several hours, though left exposed to the air in uncorked bottles. It was not till about twenty hours after being taken from the pump, that the iron of the former became precipitated, and, on agitating the bottle containing the latter, a considerable portion of carbonic

acid was evolved. The Seltzer water appeared to me to resemble least the natural spring, from its being too much charged with carbonic acid ; on allowing part of the gas to escape, its taste approximated somewhat nearer, but was still very different from the real water. Osann made the same remark with respect to the Seltzer water of the establishment at Berlin ; and, in fact, from being so strongly charged with gas, it approaches nearer to the Eau de Seltz of the Parisians, or the soda water of the shops, which, however pleasant as a beverage, and useful for the correction of acidity in wines, &c., cannot be looked upon in the same light as the natural water in a medicinal point of view.

Among the arguments which have been adduced in support of the opinion that the artificial waters cannot be regarded as analogous with natural ones, are, 1st, That new elements are frequently detected in mineral springs, of the existence of which no idea was entertained in former times, and that there is great probability that other constituent parts would be discovered were the science of chemistry in a more advanced state. 2ndly. That the state of admixture of the various component parts is more intimate in

natural springs. 3rdly. That the heat of thermal springs, being probably of volcanic origin, has a different action on the body than heat artificially produced. 4thly. That a peculiar substance of an animal nature, evident to the taste and smell, exists in several natural springs, which is not discoverable by chemical analysis, and which is absent in the imitations of those springs. 5th. That mineral springs, especially thermal ones, have a living property, and frequently produce effects on the animal economy which cannot be accounted for by their component parts, the quantity of which is often very minute. On the other hand, it is asserted that the mixture of the component parts of artificial waters is as intimate as in natural ones; that when no perceptible difference exists in the sensible and physical properties of both kinds, it may be inferred, with reason, that the effects would be the same; that some natural waters vary considerably at different times, and are affected by various circumstances, as the state of the atmosphere, rainy or dry weather, &c., whereas artificial waters are the same under all circumstances; that in some springs the composition has been different at dif-

ferent periods, and yet they are recommended in the same diseases.

Again, it is said that the living power of mineral waters and the peculiarity of their caloric are purely hypothetical, and have been disproved by experience; but even were these positions admitted, it is in the form of bath that their action has been considered to be principally manifested. "Let any one," says a German author, "point out to me a single spring without gas and mineral constituents, which, by its internal employment alone, has a more powerful action than that of common boiled or distilled water, and I am very ready to give up my view of the case." The effects of natural and artificial waters are also said to be similar, by persons who have employed both kinds; and the after effects or crises occurring subsequent to the employment of the natural, have been likewise also experienced from using the artificial, Carlsbad water.

The following case, in illustration of the identity of effects of the natural and artificial waters, is related by Dr. Schmaltz of Dresden:—

"A patient, subject to rheumatic attacks, laboured also under obscurity of vision of the

left eye, from opacity of the lens. The sight of the right eye likewise began to be affected—there were present symptoms indicative of a congested state of the abdominal venous system—constipation, headache, pains in the loins, and piles. After he had drank for a week the water of the Muhl and Neubrunnen, his physician was astonished to find that he had a decided attack of the jaundice, the eyes being of a dark yellow colour, and was apprehensive of the existence of serious disease of the liver; but the patient, smiling, allayed his fears by informing him, that on account of this very circumstance, he had a greater degree of confidence in the artificial waters; as, on two former occasions, at an interval of several years between each, he had drank these two springs at their source in Carlsbad, and, on each occasion, on the fifth day of drinking, he had been attacked with jaundice; the attacks having subsided after three weeks' use of the water, leaving his general health much improved. This also proved to be the case on the present occasion from the use of the artificial waters."

The softening of recently fractured bones, which has occurred from the use of the Carlsbad springs, has also taken place on two or three

occasions during the employment of the artificial Carlsbad. One of these cases is related by Rust; the patient had some time before fractured his arm and fore-arm: in the third week of drinking the artificial Carlsbad water, the bones became soft, and the arm pliable as wax, requiring the support of splints. A circumstance likewise occurred to Dr. Hille, the author of a work on mineral waters, who fractured his leg; the fracture had united badly, leaving a thick bony ring on the surface of the tibia, perceptible both to the sight and touch. Seven years afterwards he drank the artificial Mulhbrunnen, for rheumatic pains, and was surprised to find that not only the pains disappeared from the use of the water, but also that the bony prominence had so far diminished as no longer to be perceived by the eye.

Admitting, however, the analogy of the composition and effects of natural and artificial waters in many instances, the use of the latter must be restricted to their internal administration, as baths would be both difficult to obtain, and expensive; whereas, in a large proportion of the cases in which the greatest benefit is obtained from mineral waters, bathing is the most essential part of the treatment. This is espe-

cially the case at most thermal springs, several of which, being but slightly mineralised, are exclusively used for baths ; and even when the internal use of a mineral water is more especially indicated, bathing may frequently be advantageously combined with the drinking. On this account, then, even were there no other reasons, the natural springs are to be preferred by those who have the choice. Rust, it is true, in alluding to the slightly-mineralised springs, states a case in which he considered baths of distilled water were as efficacious as those of Gastein would have been ; but as the particulars of the case are not given, it proves nothing, even supposing that any impartial judgment could be formed upon one, or upon a few isolated cases. It is well known that the effects produced by these and some other slightly mineralized baths have not been hitherto satisfactorily accounted for, though their high temperature and elevated position are no doubt principally instrumental in the cures which they have effected ; as the influence of climate, locality, &c., of a spring upon mind and body, have to be considered, as well as the physical and chemical properties of the water, in estimating the results of a course of mineral waters. “An artificial mineral water,” says Löwig, “drank

on the Alps, would have a different operation from that which it would have if taken at Berlin ; and were the springs of Pfeffers to rise in the grove of Luneburg, they would certainly not have the same reputation which they now enjoy." *

Natural mineral springs have also an advantage over artificial waters, in most instances, in being favoured by auxiliary circumstances calculated to promote the restoration of health. Thus, the journey to the springs, the change of air and scene, the beauty of the scenery, and interesting environs of most of them—the temporary freedom from cares and annoying avocations—the early rising and exercise in the open air, are circumstances of great importance in assisting the action of the waters, and in several of the slighter ailments would probably alone suffice to rectify the deranged condition of the system ; but it must be borne in mind, on the other hand, that in several of the worst cases, in those who resort to mineral springs for relief, these circumstances can have no influence, and the beneficial effects are solely to be attributed to the waters. How many persons have I not known crippled, and almost confined to their room, suffering from pain, without society or resources for

* Schwartze Heilquellenlehre. Leipsic, 1839.

amusement, whose spirits have become gradually depressed, on account of their condition, and the inconvenience of a residence in a crowded hotel or bath-house, and yet, a short time after using the baths, have experienced a sensible amelioration, and have ultimately recovered, though they had previously tried other means of relief without success? These are the cases in which the power of mineral springs are most satisfactorily tested, and in which the mere drinking an artificial mineral water would produce little or no effect.

When drinking is the more essential part of the treatment, artificial waters have, in some respects, the advantage over natural ones, such as being available during the greater part of the year, instead of their employment being restricted to a few months in the summer, as is the case at the various Baths: they may also, in some cases, be used as a preparatory measure, or subsequent to the use of the natural springs. Several of the most powerful waters are collected together in one establishment, and if one which appeared to be indicated did not suit, recourse might be had to another; at all events, the disappointment would not be so great as where a person had been induced to make a journey of

several hundred miles to a spring, and found it unsuited to his case—a circumstance of not unfrequent occurrence, and often depending upon the adoption of the advice of those who are but little acquainted with the properties and effects of the different springs, or who are prejudiced in favour of particular ones; though it must be admitted that patients occasionally suffer disappointment from the difficulty which even experienced practitioners have in forming an opinion, in obscure chronic cases, as to the means most likely to be of service, from the intractableness or incurability of the complaints, from the idiosyncrasy of individuals, &c., in consequence of which the effects of a mineral spring cannot always be estimated before trial has been made; as is likewise seen to be the case with many remedies in the ordinary practice of physic, when medicines apparently indicated disagree, or do not produce the effects anticipated.

Some persons are accustomed, in order to increase the activity of natural and artificial waters, to add salts or other substances to them. I have elsewhere attempted to show that such additions are, with a few exceptions, prejudicial, and calculated to prevent the proper mode of action of these remedies. The same remark will apply to

the combining together two kinds of mineral water. If any one will refer to the analysis of an efficient mineral spring, as Carlsbad, he will find a quite sufficient number of medicinal substances for all practical purposes, without the necessity of adding as many more by the admixture of a different kind of water; though it is true that by this means the activity of the compound upon particular organs may be increased. This, however, is not what is usually required in a course of mineral waters, and the practice of administering the artificial ones in such a manner as to produce sensible effects at the time has occasioned some of their advocates to say that they are even more active than the natural springs; but if merely active effects upon particular organs be required, a mixture from a druggist's would answer the purpose just as well; and, as Osann has justly remarked, in reply to such as advocate the superior activity of artificial waters, "Though it may prove the greater power of the artificial waters, it speaks directly against the identity of their action with natural ones." *

Some of the natural springs are better adapted for imitation than others. The waters of Pullna and Saldschütz, which can scarcely be regarded

* Darstellung der bekannten Heilquellen, &c. Berlin, 1840.

as springs, but which percolating through the soil of a particular district, and becoming strongly impregnated with the salts with which it abounds, are collected in pits dug for the purpose, and which are actively purgative, are perhaps in no wise superior in point of medical efficacy, to the artificial ones. Their strength likewise varies at different times according to the dryness of the season, the amount of rain which penetrates into the wells, &c. The artificial Carlsbad water is also one of those most frequently used, and is very analogous in its operation to the natural springs. The Marienbad and Kissingen imitations also produce similar results in many instances, though, at the springs themselves, bathing frequently forms part of the treatment, and is of material assistance to the internal use of the water. On the other hand, sulphurous or saline springs, as Aix-la-Chapelle or Wiesbaden, are not well calculated for imitation, as bathing forms the more essential part of the treatment in most of the cases which these springs are calculated to relieve; the same may be said of Kreutznach, though at Brighton the sea-water would not form a bad substitute for these baths, combined with the internal use of the artificial Kreutznach water.

The following are the waters manufactured in the establishment at Berlin : the number of patients averages about 600 annually :—Four of Carlsbad, viz., Sprudel, Muhlbrunnen, Neubrunnen, and Theresienbrunnen. Two of Ems, the Kranchen and Kesselbrunnen ; the Grande-Grille of Vichy ; the Kreutzbrunnen and Ferdinandsbrunnen of Marienbad ; the Hauptquelle of Pyrmont ; the Pouhon of Spa ; the Franzquelle and Salzquelle of Frazensbad ; the Obersalzbrunnen ; the Ragozzi of Kissingen ; the Adelheidsquelle of Heilbronn ; the Elizabethquelle of Kreutznach ; Narzana of the Caucasus ; the waters of Pullna, Saischutz, and Selters. The Brighton establishment possesses, in addition to the above-named, the Homburg, Fachingen, and Saratoga waters. Most of these (of whose effects I can speak from some experience) will now be separately considered, in as far as their internal administration is concerned.

GERMAN SPA WATERS.

WARM WATERS.

CARLSBAD.

THESE waters will be spoken of at greater length than others, being most in request; and, in fact, there are none which have stood higher in general estimation; nor any which since their first discovery have better sustained their reputation, through successive generations, nor on which so much has been written. The first work of importance respecting them, which appeared as far back as 1522, (by Dr. Payer,) was termed *Tractatus di Termis Caroli IV.*

The more complete treatise of Summer appeared about fifty years later. At this time the waters were chiefly used for bathing, and Sum-

mer gives a description of the two large basins or piscinæ, one for men, the other for women, who bathed in common. There was besides a separate bath for persons with cutaneous complaints, wounds, etc. Since the middle of the last century, however, the waters have been almost exclusively employed for internal use. Becher, (whose standard work appeared in 1772,*) warned patients against the habit of too copiously drinking the waters, which are then apt to cause unpleasant distention and weakness of the stomach, and says, "It is a mistake to think that the beneficial action of the Carlsbad water consists principally in the increased excretion from the bowels." Kreysig, De Carro, and others, also add their testimony, that various diseases are not unfrequently cured by the Carlsbad water without its inducing increased action of the bowels. When, however, constipation exists so as to produce inconvenience, a mild aperient pill, or the addition of a little salts to the first glass of water, may be recommended. Among the writers of eminence, who have more recently treated of the Carlsbad waters, may be enumerated, Hufeland, Kreysig, Clarus, Osann, and Vetter; and of the local

* Abhandlung von Karlsbade.

practitioners De Carro, Ryba, Hlawaczek et Fleckles. Innumerable articles have also been published in the medical periodicals, respecting the virtues of these springs.

Kreysig, speaking of the solvent effects of the Carlsbad waters, states that he has frequently observed them to induce constipation, which did not previously exist, and further says, “ A phenomenon which I have constantly remarked, is that the disposition to obstructions which takes place during the use of the waters, is always accompanied with a swelling of the abdomen, and I cannot doubt that this is the effect of the water, which, after having penetrated into the economy, begins by softening and rarefying the organs which are often previously shrunk up, and as if hardened, arouses from their torpor the humours which are almost concreted in their vessels, or in the parenchyma, and reduces them to a fluid state. Many patients have to pass through this process ; it begins sooner or later at the end of a week or a fortnight, and lasts a longer or shorter period, according to the resistance which the waters experience. This course of nature, and this action of its *vis medicatrix*, may be observed in some external parts ; in cases of glandular indurations in the interior of

the body they may be recognised by means of examinations frequently repeated. The diseased organs, particularly the glands, gradually increase in size, become sensible, and even painful to the touch, and afterwards gradually soften and diminish, until they altogether disappear. The abdominal organs seem at this period to be in a state of softness like wool. The act of evolution, and of softening with swelling, appears to be opposed to the evacuating function of the bowels, and the physician ought to understand the voice of nature, and to know her wants, in order to direct the contest to the advantage of his patient. A great number of patients scarcely notice this period, others pass through it in from three to seven days, in others it may last for weeks, until the end of the course, which even then may be without result. Many patients consequently allow themselves to be intimidated, and are afraid to continue the waters, believing that they are not suited to their condition, because they lose their appetite, and their digestion is badly performed; it is thus, that the state which should necessarily accompany the evolution of the evil, and which is only a degree of transition from the disease to the cure, is often mistaken for a debility of the stomach. It is

not, however, a weakening of the stomach from the effect of the waters, but consists in a temporary diminution of the functions of the bowels and of the excretions ; and the re-establishment of the internal conditions of these functions is preparing during this interval. When the evolution has attained its maximum, abundant evacuations take place without difficulty, and a general amelioration is the consequence ; the patient feels his strength increase, the head becomes free, his good-humour returns, his appetite is restored, and with it, his digestive powers." *

These critical effects do not take place in many cases ; in some instances they occur some weeks, or months after the patient has discontinued the use of the waters ; and several, who find themselves no better, are often disappointed in their action, until they experience a crisis, and the amelioration which succeeds it. Dr. De Carro says, " Whoever has experienced at Carlsbad a regular crisis, will never more question the power of its waters, the revolution they cause in the whole system, nor the artificial disease excited by such perturbation—the Germans call it very properly a bath-storm (Bad-Strum)." †

* De l'usage des Eaux minérales. Paris.

† Essay on the Waters of Carlsbad.

As further proofs of the solvent powers of the Carlsbad waters, it is stated that during their use encysted tumours have disappeared, nasal polipi have spontaneously fallen off, that bony prominences diminish, and that fractured bones become softened, at the point of the fracture. Some similar effects have also been observed from the use of the artificial waters in Struve's establishments, of which I have adduced an instance.

The taste of the Sprudel is slightly saline; though generally acting upon the bowels, its action does not produce debility, even when the course is long continued; but, on the contrary, an increase of appetite and strength are a frequent result. It also promotes the urinary and cutaneous secretions, more especially when it does not affect the bowels. In some persons, when first taken, it occasions constipation, and tendency to cerebral congestion; even a single glass occasionally produces vertigo and other unpleasant symptoms. As the system becomes saturated with the water, symptoms peculiar to a state of plethora are often induced, such as feverishness, fulness of the pulse, agitated sleep, heaviness of the head, pains in the abdomen, or in the region of the sacrum, with hemorrhoidal

tumours or bleedings, a sense of oppression of the chest, epistaxis, etc.

There is not much difference between the springs, with respect to the amount of their constituent parts, the chief difference being in their temperature, as will be seen by the subjoined table. The Sprudel has even a higher temperature than the Kochbrunnen at Wiesbaden, and is the hottest spring in Germany. On this account, the opinion is generally entertained both among practitioners and patients, that its operation is more exciting than the other springs, which are considered more aperient, and are not unfrequently recommended previous to its employment; but this more powerful action of the Sprudel is sometimes a matter of individual idiosyncrasy, as some delicate and excitable patients bear it very well when the other springs disagree. Dr. De Carro is of opinion that one spring is not more exciting or stronger in its action than another, and says on this point, "If we appeal to practical experience, free from prejudice, we shall perceive that the difference in the effects produced by the different springs is peculiar to the individual; that the same water which purges one, may constipate another; that frequently the spring which causes congestion

and vertigo in one individual, establishes the most perfect equilibrium in the functions of another; that notwithstanding the invariability of the physical and chemical qualities in our springs, their effects often vary from one year to another in the same person. It results from this—that each patient has his particular history to relate; that he makes an aphorism, or general maxim of what he observes with respect to himself, and that each spring has its advocates, as well as its depreciators.”* On the other hand, Dr. Schwartze says, with reference to this subject, “Although, according to the more recent chemical investigations, the springs do not materially differ from each other in the quantity or quality of their contents, but only in the higher or lower degree of their temperature, yet it is just this difference of temperature which not only affects the elastic tension of the fixed and volatile parts, but also their reception into the system, and favours and modifies the subsequent reaction, which effects are lessened by cooling the springs, on which account the Carlsbad water is not exported.”†

* Du choix des Sources, in the Almanach de Carlsbad (1832).

† Allgemeine Heilquellenlehre.

The use of the Carlsbad waters is counter-indicated in very plethoric individuals, and those disposed to active inflammations, hemorrhages, and discharges ; in states of great debility of the muscular and nervous systems, diarrhœa, profuse sweatings, hemoptysis, indurations so far advanced as likely to terminate in suppuration, or which are of a schirrous nature ; in the tendency to consumption or dropsy, and also in scorbutic and syphilitic diseases, which they generally aggravate.

The cases in which these waters are most applicable, may be inferred from the preceding observations, to be chiefly certain diseased states of the abdominal and pelvic viscera, especially *engorgement* and obstructions of the liver, the system of the vena-portæ, the spleen, mesenteric glands, uteris, etc., and the consequences which these morbid conditions frequently entail, as gouty affections, urinary and biliary calculi, hemorrhoids, hypochondriasis, etc. ; but as several other mineral springs very different in their nature from those of Carlsbad, are also recommended in these diseases, it may be as well to say a few words respecting some particular conditions, which more especially indicate the preference to be given to the Carlsbad waters over

others. It does not follow, because a person labours under an obstructed and indurated state of the liver, or is afflicted with gout, that he should necessarily have recourse to these waters, which in many of these cases would do more harm than good; hence may be seen the danger of recommending empirically any particular class of remedies for diseases abstractedly considered, without an inquiry into the peculiarities of individual cases; and also of invalids acting on their own responsibility, or on the advice of other sufferers, and non-professional persons, who are not qualified for investigating these individual peculiarities. Of this misapplication, numerous examples are every year seen at the different baths. There is no class of remedies calculated to do so much good in many chronic diseases as a well-directed course of mineral waters, and none more likely to be prejudicial when improperly used, especially if the springs be energetic in their action, as those of Carlsbad.

A person of full habit, ruddy complexion, and active circulation, in whom there might exist a disordered state of the digestive powers, with hepatic *engorgement* requiring for its removal a course of mineral waters, would in general be a case less suited to Carlsbad than for the use of a

sulphurous, or one of the cold saline aperient springs, as Homburg, Marienbad, or Kissingen ; or where the quantity of gas contained in these springs would be likely to disagree, and a more active aperient effect is required to reduce the general plethoric state of the system, the waters of Pulla, or Sedlitz, might be substituted. With many persons also, especially of the female sex, of considerable *embonpoint*, leading an inactive life, who are liable to become flurried on slight occasions, and are subject to irregular determinations of blood to particular organs, (marked by flushings, headaches, and coldness of the extremities,) the Carlsbad waters, though they might be indicated for existing disease of the digestive organs, would in many cases disagree, and a course of tepid bathing in an alkaline or saline spring, with the occasional use of the douche, and the internal exhibition of a water like Marienbad, or one of the others which I have named, would be more likely to be productive of good effects. On the other hand, Carlsbad would in general be best adapted to those cases, when the person is of spare habit, languid circulation, sallow complexion—accustomed to sedentary occupations or to those requiring much mental application ; —as is the case with many residents of capital

cities engaged in commercial, political, or literary avocations, and who at the same time often indulge freely in the pleasures of the table, by which derangement of the digestive organs and obstruction of the circulation through the abdomen are induced, with their consequences, liver disease, inactivity of the functions of the bowels, piles, etc. Such persons have very often rendered their complaints more intractable by the quantities of medicine they have been accustomed to take, which, affording them temporary relief, enables them to continue for some time longer their prejudicial habits. The same may be said of those individuals whose digestion has become impaired, who have liver induration, and other local complaints arising from a residence in tropical climates. In such cases, the solvent and alterative action of the Carlsbad waters is often productive of the best effects in dispersing the visceral enlargement, and in improving the general health. When there exists in such persons a degree of irritability of the system, which the Carlsbad waters might be likely to increase, the use of a cold aperient water, according to circumstances, will often be preferable to Carlsbad; and also when active effects upon the bowels, by critical discharges, are not required.

But it is difficult and often impossible to specify in a definite manner the particular states or forms of diseases to which Carlsbad, or any other active mineral water, would or would not be suited. So much depends on the peculiarities in individual cases, that only general indications can be laid down, liable to many exceptions.

In the forms of atonic gout which affect individuals of a bilious temperament and sedentary habits, combined with much stomach and liver derangement, the Carlsbad springs will often be better calculated than any others to remove the disease, and prevent its recurrence. They would, however, not be so applicable to the generality of cases of gout in persons of full habit addicted to free living, whose pulse is full, in whom the attacks take place regularly, and are succeeded by an immediate return to health,—neither would they be so well adapted to the kinds of gout termed nervous, occurring in irritable subjects, when the attacks are irregular, shifting suddenly from one part to another. In the gout of elderly people, who are in other respects in tolerable health, whose digestion is not materially impaired, in whom the disease is hereditary, and often accompanied with the deposition of calcareous concretions in the joints, Carlsbad would

be less applicable than Wiesbaden, which in similar cases is productive of the most marked beneficial results.

In cases of gravel and stone arising from excesses in the pleasures of the table, in persons of the middle periods of life, and whose digestive organs are a good deal disordered, a course of Carlsbad waters, by remedying the disposition upon which the formation of the calcareous concretions depends, would be a very probable means of preventing a recurrence. Their action, though it cannot be said to have a direct lithotriptic property, yet frequently causes the expulsion of small calculi. When, however, the presence of stone is ascertained by sounding, the Carlsbad waters would not be so recommendable as the more alkaline ones of Vichy, Bilin, or Fachingen, which might also be employed with advantage in some cases, after the stone had been broken by the operation of lithotrity. A case of the effects of the Carlsbad waters, in causing the expulsion of fragments after this operation, occurred in the person of Dr. Bigel, of Warsaw, and is related in one of the Carlsbad almanacks.

Hypochondriasis in its material form, is one of the complaints in which Carlsbad would be

productive of the best effects, especially when connected with much derangement of the digestion, hepatic obstruction, and constipation, and when the disease has been of long duration. In some of these cases, as in simple abdominal and other diseases, little or no benefit may be experienced on the first trial, but by subsequent attention to the mode of living, and by resuming the waters a second or even a third course, if there is reason to expect advantage may be derived, the disorder may often be overcome. The same may be said of decided melancholy, in several cases of which these waters have been highly serviceable.

Several periodical diseases of a nervous character, as hysteria, neuralgia, and tic, will often be removed by the use of the Carlsbad waters, particularly when connected with a disordered state of the digestive organs. Other mineral waters may be equally efficacious in these complaints, and also in others for which Carlsbad has been recommended, as chlorosis, scrofula, suppressed or disordered menstruation, sterility, etc., which would require minute inquiry into the various co-existing circumstances in order to form an opinion as to the kind of spring most likely to be efficient in any given case.

The Neubrunnen and the Muhlbrunnen contain $41\frac{1}{2}$ grains of solid substance to the pint—the Theresienbrunnen only $36\frac{1}{2}$. The two latter are, however, the most gaseous, they contain about fifteen cubic inches of carbonic acid. The temperature of the Sprudel is 59 R., Neubrunnen 50, Muhlbrunnen 43, Theresienbrunnen 43. Dr. Wolf, of Prague, observes, that the quantity of carbonic acid in the Sprudel is not sufficient to change the carbonates into bicarbonates, which is the case in the other springs, and that in proportion as the temperature of the springs diminishes, the quantity of the bicarbonates increases. In the Theresienbrunnen, there are still three cubic inches of free carbonic acid remaining after the saturation of the alkaline base.

In order to avoid a repetition of several of the remarks already made, shorter notices of the other waters will be sufficient for practical purposes.

EMS.

THE Ems waters resemble greatly, in point of composition and temperature, those of Vichy, though there is a considerable difference in the amount of the principal mineralising ingredients, the carbonate of soda, which is more than doubled in the latter. At both places bathing constitutes as important a part of the treatment, in many cases, as drinking the water.

The different proportions of the saline substance and gas, of the principal springs of Ems, enables the practitioner the better to adapt their employment to particular conditions and constitutions; the internal exhibition of the Kesselbrunnen being better suited to some individuals, than the Kränchenbrunnen and *vice versâ*, and where a milder effect is required. The action of the water is essentially alterative, improving the secretions of the alimentary canal and of the kidneys, in many instances without any increase

in their quantity. Indeed, as far as the state of the bowels is concerned, the reverse is not unfrequently the case, and it becomes necessary to have recourse to medicine.

The Ems waters, like most other warm springs, have been much recommended in gout and rheumatism; but in most cases of the more intractable forms of these complaints, especially in elderly persons, I should prefer a spring of a different kind. In some of the milder forms, in young subjects, with a tendency to inflammatory action, or co-existing with nervous irritability, the Ems springs would be preferable.

The resident practitioners also speak highly of the effect of these waters in cases of disordered digestive functions, with torpor of the liver; and there is no doubt, that in several of these cases, attended with heartburn, acidity, and other symptoms of a vitiated state of the secretions, they are calculated to be of considerable benefit,—they are also well adapted to some deranged states of the health, occurring to women and children; without any particular organ appearing to be the seat of disease. Dr. Diel, who was bath physician at Ems, for upwards of thirty years, strongly recommended the waters in congested states of the abdominal circulation, with

its consequences, hemorrhoidal affections, etc., and also in dysmenorrhœa, and some other diseases peculiar to females. Dr. Döring also, who has published a work on the Ems springs,* which, like most others on particular baths, enumerates a long list of diseases which they are calculated to cure, adds his testimony to their beneficial influence in these complaints, and in some measure compares them with those of Carlsbad,—admitting, however, the latter to be best suited to torpid habits; but with the exception of their temperature, there is no other point of resemblance between the Ems and Carlsbad water, both their composition and *modus operandi* being very different. The Carlsbad water is exceedingly energetic and exciting in its action, and is generally productive of sensible effects at the time; the sulphate of soda being the predominant salt, of which the Ems water scarcely contains a trace. The Carlsbad water also is almost exclusively taken internally; whereas, at Ems, bathing forms a principal, and in many instances, the most essential part of the treatment. In fact, I should say, that for most of the cases to which the Carlsbad waters would be best adapted,

* Ems mit seinen natürlich-warmen Heilquellen und Umgebungen.

those of Ems would be inapplicable, or not productive of benefit; and that, on the other hand, Ems would relieve in several complaints, where Carlsbad would be prejudicial.

But it is in diseases of the respiratory organs that Ems has acquired the highest reputation; patients with these diseases forming annually a large proportion of its visitors, some of them in such an advanced state of disease as to be little likely to derive any advantage from any remedial measures. Hufeland, in alluding to the effects of the Ems waters, in this class of disease, says, "We know how few mineral springs there are, that can be used with safety in diseases of the lungs; patients with such affections are commonly prohibited from visiting a mineral spring; here the reverse is the case, and, in my opinion, Ems stands alone with Selters in this respect."* Diel also adds his testimony to their efficacy in these cases, and in certain kinds of asthma. It is, however, acknowledged by all the physicians, that in confirmed phthisis the Ems waters would not be suitable. In the earliest stage of that disease, (or when there merely exists a predisposition to it, without any actual signs of its

* *Practische Uebersicht der vorzüglichsten Heilquellen Deutschlands.*

presence,) whilst the tubercles are in a latent state, and limited in number,—which may often be ascertained by auscultation and percussion,—and where the patient has merely slight cough with mucous expectoration from sympathetic irritation of the bronchial membrane, without hectic fever, great emaciation or debility,—a course of these waters, followed by a proper attention to climate for the ensuing winter, may do much. In some cases also of laryngeal or bronchial disease, which often closely resemble tubercular phthisis, occurring in young persons, or those approaching the middle age, the waters of Ems would, in all probability, be extremely beneficial; as also where an attack of inflammation has left an obstruction to the free circulation of blood through the lungs, from partial hepatisation of their texture; where, however, this exists to any extent, the waters would probably be inadmissible; or, if their employment were allowed, the effects would require to be closely watched.

Dr. Döring recommends the Ems springs in scrofulous diseases; and in many of these affections I should say, they are likely to produce a great amelioration; especially in delicate children with enlarged mesenteric glands, the water

being drank alone, or with milk, and combined or not with bathing, according to circumstances. In several patients with enlarged glands of the neck, and other local affections, from the same constitutional cause, a course of Ems waters would be highly serviceable as a preliminary to the employment of a more tonic medication; tonics being very often indicated in these patients, who, however, are frequently not able to bear them, without the previous use of remedies of a more solvent kind.

In nervous affections of an hysterical nature, Ems is calculated to be of considerable benefit, particularly if there coexist disorders of the digestive functions, or of the periodical secretion, with irregular distribution of blood, as marked by frequent flushings, cold feet, etc.

VICHY

Is the most frequented watering-place in France. Its springs were used by the Romans, remains of piscinæ, marble baths, medallions of Nero, and other antiquities, have been found on

the spot. The springs now in use amount to seven, of which the Grand Grille is most used for drinking.

The water of Vichy is limpid, without smell, of an acidulous, alkaline taste, not unlike that of soda water. It contains a large proportion of free carbonic acid. Carbonate of soda, and carbonic acid gas, are the predominating ingredients.

The operation of these waters is alterative, solvent, and diuretic, without being aperient or diaphoretic: it affects most perceptibly the secretion of urine, increasing its quantity, and altering its quality, so as, according to M. D'Arcet, to render alkaline the renal secretion of a person after having drank three or four glasses, or taken a bath: hence it is highly useful in some diseases of the urinary organs, especially stone, and the disposition to the formation of lithic acid, or what is commonly called red gravel.* The

* The lithontriptic properties of the Vichy waters have been evidenced of late years in several cases of stone. I formerly translated the account of M. Chevalier's experiments respecting the dissolution of urinary calculi in this water; and M. Petit has since published several cases illustrative of their efficacy. They are no less efficacious in chronic gout of long duration. M. Petit has just published a large work on these waters, which I have not yet had an opportunity of perusing.

water is also much used, both at the springs and throughout France, in those deranged states of the digestive functions which are termed abdominal engorgement or obstruction; in chronic enlargement of the liver or spleen; long-standing stomach disorder, with acidity; hemorrhoidal affections; and uterine derangement. It has but little effect on scrofula, most diseases of the skin, and rheumatism. Its use should be prohibited to plethoric, or highly irritable persons, to those of rigid fibre, in nervous diseases and affections of the chest.

The Grande Grille has a high reputation in cases of abdominal obstruction.

Some of the remarks already made, under the head of Ems, are also applicable to Vichy.

COLD WATERS.

SPA.

THE Spa waters belong to the class of the more pure chalybeates, as they contain but a small portion of saline substance in proportion to the amount of iron. This, like others of the class taken internally, has a directly fortifying action upon the nerves of the stomach, imparting tone to the whole digestive apparatus and to the system generally, increasing the muscular powers, and improving the quality of the blood, and of various secretions. They are especially adapted to persons of torpid and lymphatic temperaments, weakly and relaxed constitutions; to cases of general debility and muscular atony, unattended by morbid alteration of organs, but frequently dependent upon moral causes of a depressing nature; upon diminution of the

quantity or deterioration of the quality of the blood induced by hæmorrhage, long-continued discharges or acute diseases. Chalybeate waters are also specially applicable to many cases of impaired energy of the assimilative functions, consequent on excesses or other causes ; to hypochondriasis and other disorders of the nervous system, passive hæmorrhage, and some catarrhal affections. They are likewise not unfrequently used as an after-cure, subsequent to the employment of other mineral waters. It is well known, however, to practitioners, that in many cases of debility, though apparently arising from no local disease, the exhibition of tonic remedies, even of the lighter kind, is not well borne, in consequence of the extreme susceptibility of the nervous system to impressions of any kind. In other cases, the debility, though the most apparent symptom is not the cause of impaired health; but is superadded to latent alterations in the state of particular organs, which prevent the beneficial action of this class of remedies, and which require for their removal deobstruents or alteratives ; some mineral waters combine these two modes of action, the quantity of iron being no more than sufficient to correct the otherwise too solvent and relaxing properties of the saline

ingredients, and these are frequently employed with great advantage in cases where direct chalybeates would be prejudicial, until the system has become better prepared for their administration.

On the other hand, tonics and chalybeates are prejudicial in persons of full habit of body, of rigid fibre, with tendency to visceral congestions, active hæmorrhage, and inflammatory diseases, in cases of organic change of important internal parts; in dropsy and pregnancy. When they agree they are easily digested, produce a feeling of invigoration, improved appetite and strength, without inducing constipation of the bowels, or symptoms of congestion towards the head or chest. Dr. Kreysig says of the Spa water, that in some cases of morbid sensibility of the stomach and bowels, it is better borne than some others of the same class; and also where there is a disposition to abundant discharges from the alimentary canal, or from the uterine system. In some cases where a more directly tonic action is required, the Pyrmont water might be preferred.

FACHINGEN.

THIS water taken into a glass is clear, sparkling, and emits small bubbles of carbonic acid. Its taste is agreeably cool and refreshing, piquant and alkaline. Many prefer it as a summer beverage mixed with sugar or wine to Seltzer water, from which, however, its composition materially differs, inasmuch as a pint contains nearly a grain of iron, as much as 24 grains of bi-carbonate of soda, and 20 cubic inches of free carbonic acid, while there are only four grains of muriate of soda. Hence it stands foremost among the alkaline springs, none of those of Germany except Bilin containing so large a quantity of alkaline salt. In this respect it approaches very nearly to Vichy; the most frequented of the French Baths, from which, however, it differs in temperature, and in containing a larger quantity of iron. It also contains nearly twice as much gas as the Vichy springs, on which account, as also from its low temperature, it is much pleasanter to drink than even the Celestins at Vichy, which is the coolest

spring (18° R.) and one of those most generally used for drinking.

The Fachingen water may, therefore, be considered applicable to many of the cases in which the Vichy springs would be recommended; though these latter are a great deal employed in the form of baths, are more solvent, and hence better calculated to procure the dispersion of swellings or *engorgement* of the abdominal viscera, as the liver, spleen, &c., while Fachingen having a more tonic property, and not being used for bathing, would be better adapted to rectify a faulty state of the mucous membrane of the alimentary canal, with acidity, weak or painful digestion, &c. It is also well suited to the treatment of chronic bronchial and tracheal affections, asthma with copious expectoration, when there is not much constitutional irritability or tendency to inflammation, in which case a spring of a different nature, as Selters or Wielbach, would be preferable.

Gouty people may also drink the Fachingen water habitually with advantage; the good effects of alkalies in this disease being well known. It is more adapted to render service in the erratic gout in nervous individuals, than in that kind which occurs habitually at intervals, of a more

fixed nature, and combined with deposition of chalky concretions in the joints.

But there is another class of cases in which the Fachingen water is calculated to be of great service, viz. gravel and stone in the bladder. Some cases of stone, there is every reason to believe, might be altogether cured by mineral waters strongly impregnated with alkali and carbonic acid gas, if reliance may be placed upon the accounts received and the experiments made of the action of the Vichy water upon these foreign bodies, and of which the commission appointed by the Académie Royale de Médecine to investigate the subject, made a very favourable report. Dr. Petit of Vichy, by whom several of these cases are reported, observes—“What above all tended to the discontinuance of the employment of alkalis (in cases of stone) is, that they were formerly administered in a state of purity or only slightly carbonated, and were thus frequently very irritating and even dangerous; they could consequently only be given in too feeble doses to impart to the urine the degree of alkalinity necessary to produce the desired effect; but by their combination with carbonic acid they are rendered innocuous when perfectly saturated, without losing any of their

solvent property; hence they may be employed in much larger doses."

As in these cases, the principle of the treatment is to maintain the urine and secretions for some time in a state of alkalinity, the object would be materially facilitated by the baths of the water, which would obviate the necessity of taking such large doses internally, and I have little doubt that much more might be done by these means in cases of stone than has hitherto been supposed possible by the profession. I have stated in another work,* that one of the consequences most to be apprehended after the operation of lithotrity is, that fragments of calculi may escape detection, and occasion a recurrence of the disease; hence, when there is reason to believe that the foreign body has not been entirely removed from the bladder, a course of alkaline waters, or of the alkaline bi-carbonates, would be likely to procure its complete destruction. This plan of treatment might also be adopted as the most probable means of preventing a return of the disease in cases where there exists a strong tendency to the formation of calculous concretions.

* On the comparative advantages of Lithotomy and Lithotrity, being the Essay to which the Jacksonian Prize of 1838 was adjudged.

SELTERS.

THIS water is also very efficacious in several diseases, and is used extensively upon the continent as a remedial means. It contains as much as 36 grains of saline substance to the pint, of which 16 are muriate, and 15 carbonate of soda; and 15 inches of carbonic acid gas, with which it is intimately combined; in this respect it has the advantage over the Geilnau spring, which possesses a larger quantity of gas, but no muriate of soda and less of the carbonate. There is but a very minute portion of iron, and even this is precipitated in the bottled water, which is decomposed by the smallest quantity of vegetable substance, as a piece of straw getting into the bottle, sulphuretted hydrogen being thereby produced. It is easily digested, and seldom occasions congestion or determination of blood to particular organs, like the majority of strongly impregnated mineral waters, on which account it is often advantageously employed in some febrile and inflammatory affections. Its action is in general cooling, exhilarating and alterative, im-

proving vitiated secretions of the mucous membranes, giving tone to their glands, and promoting absorption. It may generally be taken without risk by robust and plethoric individuals, and is of great service in cases of torpor of the vascular and glandular systems; stomach derangement with acidity and constipation, tendency to gout in full habits; and scrofulous complaints. "But," says Hufeland, "it is in chronic diseases of the lungs, and especially in pulmonary phthisis, that the water is of the greatest efficacy. In this disease, when other powerful remedies produce no good effect, Seltzer water has often an extraordinary efficiency. Where there exists relaxation of the mucous membrane, by the exciting property peculiar to it, the energy of the relaxed vessels and mucous glands becomes re-established; in the tubercular kind it resolves obstructions without exciting inflammatory irritation; and where inflammatory complication exists, it regulates the abnormal secretion, and often prevents suppuration. I say all this after great experience, and could quote many cases of success. Seltzer water seems to contain the due admixture of principles required in this disease; viz., a slightly stimulating action, and the faculty of producing an

increase in the power of the lungs and glands without causing determination of blood to them, or accelerating the circulation through the body. It produces the best effects in this disease when mixed with a third part of warm milk, especially asses' milk." Notwithstanding this high eulogium, patients labouring under phthisis, and their friends, must not expect, when the disease is fully developed, that Seltzer water, any more than other remedies, can be productive of permanent benefit; though in the early stage its use may check the disposition to the formation of tubercle, and thus arrest the progress of the disease.

Vetter* speaks highly of the advantage of Seltzer water given in small and frequently repeated doses, after proper evacuations, in the fevers usually prevalent in summer, and complicated with erethism of the upper part of the alimentary canal, or what are commonly called gastric fevers, in which vomiting is so often a distressing symptom; though when acute inflammation is present it would not be advisable to give it without being diluted with water. I have had several opportunities of witnessing the bene-

* Op. Cit.

ficial effects of this water in cases of fever, and in diseases of the respiratory organs.

The Seltzer water would also be serviceable in many cases of irritation of the urinary organs, or tendency to the formation of stone or gravel, chronic inflammation of the mucous membrane of the bladder with ropy mucous secretion.

When employed medicinally, a large quantity, as a bottle or two a day, is requisite. The water is also serviceable as a wash for the mouth, in preserving the teeth.

HOMBURG.

THE Kurbrunnen has a temperature of from 8° to 9° R., a piquant, salt, and bitterish taste, rather unpleasant at first, but not disliked by those accustomed to it. The first effect experienced, on swallowing some of the water, is a sensation of warmth, and exhilaration: its action is solvent, laxative, or purgative, according to the constitution of the person, and the quantity taken; but owing to the gas and iron, its use is not followed by debility. When it does

not affect the bowels, it generally acts upon the kidneys. This spring contains a much larger quantity of salts and more gas, but less iron, than the Ragozzi at Kissingen; hence its action is more decidedly aperient, though at the same time exciting. The large quantity of gas and iron singularly modifies the action of the water. Most waters which contain purgative salts, have little more iron and gas than serves for the proper mixture of the different ingredients, but in the Homburg water the gas has a distinct operation, and strongly excites the nervous and vascular systems. Persons, in general, after drinking for a few days, feel themselves lighter and more cheerful; the appetite is increased, and acidity in the *primæ viæ* removed. The stimulating action of the water on the alimentary canal and circulation, produces a corresponding increase in the activity of the absorbent system, and has a powerful effect in removing visceral or glandular obstructions.

Thus, it will be perceived, that the Homburg water is eminently calculated to be of great service in several disordered states of the alimentary canal, and associated viscera; especially deficient appetite, acidity, laborious or painful digestion, a torpid action of the liver and bowels

and the indigestion which affects those who have been accustomed to the use of ardent spirits, and is attended with heartburn, eructations, tendency to vomiting, and pyrosis; though in some of these cases, where a more tonic action is required, the Kissingen or Marienbad water be preferable. Dr. Muller speaks highly of its effects in the more severe forms of hypochondriasis and melancholy, accompanied with material derangement of the digestive apparatus, and a torpid state of the bowels;* as also in the removal of glandular enlargements, of a scrofulous nature: in cases where a stimulating and purgative operation is required; of chronic affections of the skin, connected with obstruction of the circulation of the liver, or disordered digestion.

FRAUZENSBRUN,

OR Eger, is a very gaseous and sparkling water with a piquant taste, leaving an astringent impression upon the tongue; it contains much

* *Efahrungen über den Gebrauch und die Wirksamkeit der Heilquellen zu Homburg vor der Höhe.*

more iron and gas than the Kreutzbrunnen, is a more decided chalybeate water, with sufficient aperient salt to prevent the binding effects of the iron, which in the more pure chalybeates, as Schwalback or Spa, sometimes prevents their exhibition, though their action is more directly strengthening. This water is more especially adapted to rectify states of debility, with small abdominal engorgement, which so frequently occur in literary persons, and others whose health is deranged by a sedentary mode of living. Those cases of weakness from diminution of the fibrine of the blood, induced by hemorrhages, discharges, etc., or from moral impressions, would also be greatly benefited by a course of the Franzquelle, as would those chlorotic patients who are unable to bear the action of a more direct tonic. Kreysig enumerates among the cases to which this water is applicable, the arthritic affections of weakly people, the disposition to hæmorrhoids, to hemorrhages, or to abortion, and nervous disorders when not attended with a high degree of irritability, in which case Ems would be preferable. It is also a very efficient water for relieving the wear and tear of avocation.

KREUTZNACH.

THE Kreutznach springs contain bromine and iodine, which are known to be efficacious in the treatment of glandular diseases, in larger quantity than others of the same class; and though the amount of these substances in the quantity of water taken during a course would be too small to produce any positive effect, yet it materially assists when in combination with the saline ingredients, especially when, as at Kreutznach, baths are at the same time used to which are added some of the Mütterlange or strong brine, the quantity absorbed would not be inconsiderable. Hence no other mineral water has acquired in so short a time a special reputation in scrofulous cases, and in the tendency to scrofula in young subjects; the water internally taken being alterative and laxative, while the baths act powerfully upon the absorbent system, diminishing glandular enlargements and other swellings. Where, however, in similar cases, there is a disposition to inflammatory action, these springs are not so applicable as others.

In long-standing cutaneous diseases of a torpid character as psoriasis, syphilitic eruptions, &c., the Kreutznach waters are calculated to be of service, baths constituting the principal mode of employment. Some scrofulous cases might be equally benefited by drinking the artificial water, combined with sea-bathing, as would also relaxed states of the air-passages, digestive or reproductive organs. Some kinds of chronic rheumatism might likewise be more readily removed by this treatment than by bathing in a thermal water.

The Heilbronn water greatly resembles that of Kreutznach in its effects.

MARIENBAD.

THE taste of the principal spring, the Kreutzbrunnen, is saline, piquant, with an *apres-gout* of iron, and is not disagreeable. As a proof of the estimation in which this water is held, it may be mentioned, that little less than half a million of *cruches* are exported annually, which is more than from any other spring in Germany, except Selters.

When drank, the water is easy of digestion, and does not generally disagree, unless there be some offending matter in the intestinal canal, when its use should be preceded by a purgative. Great attention is required during the course not to take improper articles of diet, which, however, is pretty well guarded against on the spot by the simplicity of the dinners. It generally increases the appetite, and produces some action on the bowels, though this is not always the case, and the water is not on that account the less efficacious, provided the state of constipation do not continue. After the water for a certain time, patients not unfrequently pass large quantities of dark green matter from the alimentary canal, which may be considered as a critical evacuation, and does not induce debility.

According to Heidler, the use of the Kreutzbrunnen is most applicable in those cases where there is a deranged state of the mucous membrane of the alimentary canal, with collection of mucosities, in cases of obesity, abdominal engorgement, and congestion of various organs, from repletion and fulness of the veins; in the nervous affections of both sexes, when connected with a full habit, and in persons accustomed to free living who lead a sedentary life. In such

persons, some degree of acceleration of pulse, feverishness, and determination of blood towards the head, are sometimes occasioned ; which effects may often be prevented by allowing the water to be exposed for some time to the air before drinking, or by warming it, which allows the escape of the gas ; though by these means the tonic properties are impaired, and the operation is rendered more laxative.

This water is also well adapted to procure the evacuation of gall-stones, and to prevent their formation, as well as that of gravel or stone in the bladder, which so frequently depends upon the above-mentioned causes ; here also the diuretic property of the water has a beneficial effect in causing the expulsion of these concretions when formed ; though, when a diuretic effect is more especially sought for, the Ferdinandsbrunnen is to be preferred *

The opinion of Vetter coincides with that of Heidler in most respects. He considers that it is only by the excretion of effete matters by the bowels that the water is beneficial, though he also deprecates its being taken so as to produce active purgation at the time ; and observes, “ The principal complaints in which this water

* Marienbad et ses différens moyens curatifs.

is beneficial, are dispeptic affections, with the character of irritation and disordered innervation of the alimentary canal, from too much eating, from the quantity of the food being too exciting or too heavy ; and also from too freely drinking of fluids, which are not water, combined with deficient muscular exercise ; and especially when the patient has been in the habit of having recourse to drastics, which produce only temporary relief, and impair the nervous energy of the stomach ; and which, by their exciting property, tend to induce a high degree of torpor, and fullness of the nervous system.”*

In some gouty cases, in persons of full habit, and addicted to the pleasures of the table, the Marienbad waters will be found very efficient ; indeed, it was from their effects in this disease that these springs formerly acquired so high a reputation. To certain forms of gout they would not, however, be so applicable as others, to which I have alluded under the head of Carlsbad. From the analogy which the action of the Kreutzbrunnen bears to the Carlsbad waters, it may be used in the same kind of cases ; it will be therefore unnecessary to enter more into detail ; the Carlsbad waters, however,

* Heilquellenlehre.

from their high temperature, are more penetrating, solvent, and exciting, and on this account do not suit some persons. The Kreutzbrunnen has been termed the cold Carlsbad, and Hufeland, after stating that it is entirely to the efficacy of its springs that Marienbad owes its reputation, says, ‘I have again convinced myself that the Marienbad water is the Carlsbad cooled, and that it is indicated in similar cases as Carlsbad, but is to be preferred when the latter would be too exciting.’

The Kreutzbrunnen has also been compared to the Ragozzi of Kissingen, and the Franzensbrunn, and there is no doubt that their action is in some respects analogous, and that in certain cases, the one or the other of these springs might be used with equal probability of success. Some material differences will, however, be found in their composition; thus, the Ragozzi is more gaseous, and contains principally the muriate of soda, while the predominating salt of the Kreutzbrunnen is the sulphate. The quantity of iron is also greater in the Ragozzi, which, on the other hand, scarcely contains any carbonate of soda, of which there is not an insignificant portion in the Kreutzbrunnen. The Ragozzi is therefore on the whole, more tonic, acts less on the

bowels, and would be better adapted than the Kreutzbrunnen to some cases and constitutions, and *vice versâ*.

KISSINGEN.

FEW waters have come into such general repute within so short a period as these ; as may be seen from the increasing number of visitors who annually resort to the place. The taste of the Ragozzi is saline, sometimes more piquant than at others, and is not disagreeable after the first glass or two. It contains a large quantity of muriate of soda and other salts, nearly three quarters of a grain of iron, and twenty-six cubic inches of carbonic acid gas to the pint. Dr. Balling says, "A glass of the water taken fasting causes a sensation of warmth in the stomach, with distention, and eructation of gas shortly afterwards, and at times a slight headache, or oppression over the forehead. On the first days of drinking there is increased appetite and activity in the functions of the alimentary canal, with elasticity of spirits. In the second

week, a degree of reaction mostly takes place, the patient becomes capricious and irritable, the tongue is furred, the bowels more irregular, and the appetite rather diminished.” * Most persons are recommended to drink the prescribed quantity of water in the morning fasting, and not to take any in the after part of the day. In some robust and plethoric persons, owing to the quantity of gas and iron, the water would be likely to disagree without some preparatory treatment; and it is often not well borne by those of an irritable habit, or who have naturally a quick pulse. “So long as patients take the water without dislike, or with a degree of relish, the object of the course is not yet attained, and it should be continued for a longer period. As soon, however, as critical evacuations occur, and the patient acquires a dislike to the water, with a sense of unpleasantness in the stomach, then the point of saturation is attained. This occurs at very different times in different individuals, but rarely before the twenty-first day.” †

The combination of stimulating, solvent, and tonic powers of the Ragozzi, renders it most suited to relieve those states of disease, connected

* Kissengen et ses eaux Minerales.

† Vetter Heilquellenlehre.

with, or dependent on, abdominal plethora, liver congestion, and obstruction of the circulation of the vena portæ, which chiefly occurs in persons of middle age. A deranged state of stomach and bowels with difficult digestion, or feeling of unusual distention after eating; constipation; piles; a disordered state of the skin with eruptions, especially about the face; painful and irregular menstruation; hypochondriasis; gout, when recent and not occurring in old people; and scrofulous affections of the glands, are among the complaints most likely to be cured or relieved by a course of the Ragozzi water. The same means would be very efficacious in many cases of dyspepsia, arising from excess in the pleasures of the table, or the abuse of ardent spirits, and attended with heartburn, acrid eructations or pyrosis. Dr. Maas observes, that in cases of gout, complicated with deranged digestion, Kissingen is most applicable. The same may be said of cases of vascular fulness of the uterine system, inducing hysteria, sterility, &c. When these complaints depend upon nervous irritability, without visceral obstruction, or undue determination of blood to particular organs, a water of a different kind is indicated.

A long list of ailments is given by the writers

on Kissingen, in which the superior efficacy of the waters is advocated. As, however, this is the case with most local authors, I have considered it needless to recapitulate them, and have restricted myself to specifying those instances in which the waters are acknowledged to be more especially applicable.

ON BATHING AND SEA BATHS.

THE use of the bath may be said to date from the earliest periods, not only as a hygienic and remedial means, but also in a religious point of view as typical of moral purity, and as such it is still continued to this day in Eastern countries. The importance attached by the Greeks and Romans to bathing is sufficiently attested by the remains of the magnificent structures which excite the admiration of the beholder, and by the beautiful specimens of fresco-painting and sculpture discovered in them. It is computed that in the baths of Caracalla at Rome as many as three thousand people could bathe at the same time in water at various degrees of temperature suited to their inclinations. The ancient Gauls had

their sacred fountains: and in Great Britain certain springs were celebrated for their curative powers from a very early epoch.

Wherever Rome extended her conquests, baths were established on a scale of unprecedented grandeur, of which numerous traces may be seen at the present day, especially at several of the natural warm springs of France, Germany, England, &c.

In some northern countries,—Russia, Finland, &c.—the use of hot, and especially of hot air and vapour baths, is excessively common among all classes. As contrasting with this practice, baths are comparatively neglected in Poland, which is doubtless the principal reason of the greater prevalence of intractable cutaneous complaints, (as plica, &c.,) among the inhabitants. The delightful sensations experienced after the shampooing and other processes employed at the Turkish, Egyptian, and Indian baths, have been sufficiently often described by travellers.

Notwithstanding, however, the universal employment of baths in ancient times, and even by uncivilised nations up to the present day, bathing, especially the use of the tepid bath has been perhaps more neglected by all classes of the in-

habitants of Great Britain, than by those of any other civilised country. Many persons, both in the metropolis and in the country, though scrupulously particular in the ablution of visible parts of the body, as the face, neck, and hands, seldom or never think of taking a general bath; and, notwithstanding the greater density of the atmosphere, and the number of its inhabitants, which should render the use of the bath more imperative, London possesses but few facilities for bathing, in comparison with many of the continental cities, where the baths are numerous, well arranged, and at a price which puts them within the reach of all. It appears, however, that a greater degree of public attention is now directed to this important circumstance, the number of baths having increased in large towns of late years. In fact, when we consider the extent of surface occupied by the skin, its various uses both as the chief organ of sensation, in which the ultimate ramifications of the blood-vessels and nerves terminate; and also, as that in which the important functions of absorption, the secretion and excretion of perspiration and of the sebaceous matter by which its surface is lubricated, are carried on; its analogous office to the lungs in promoting the decarbonization

of the blood; and its extensive sympathies with other parts, especially the mucous membranes of the air-passages, of the alimentary canal, and the kidneys,—we cannot fail duly to estimate the importance of bathing, as the means best adapted both for maintaining this organ in a healthy condition, and also of rectifying many disordered states of the economy; and yet how seldom is it that baths are recommended in chronic diseases! Can it excite surprise that in individuals who pass months together without taking a bath, or perhaps even without washing the surface of their bodies (as is the case especially with the poorer classes of the community), the functions of the skin should become materially impaired, its circulation torpid, its secretions obstructed and vitiated, frequently giving rise, by their re-absorption, to deranged states of the health, the cause of which is seldom discovered, and which are vainly sought to be remedied by the internal administration of medicines. Among the numerous patients who daily apply for relief at the various hospitals and dispensaries, and whose skin is generally dirty and in a disordered state, how rarely is it that a bath or ablution is ordered! It is true, that the recommending baths to these patients, as part of the treatment of

their diseases, would be of little use so long as the medical institutions in England are so indifferently supplied with them as at present; but even in private practice, where there would be no obstacle to the more free use of baths, how rarely do they form a part of the treatment, unless there be any existing disease of the skin! I am convinced that, in many instances, the digestive powers become deranged, and the general health undermined, from neglecting to pay proper attention to the state of the skin—that a large proportion of the catarrhal, rheumatic, nervous, and cutaneous affections, so prevalent in the variable climate of Great Britain, might be traced to the same cause—and that the tendency to these complaints, as well as to pulmonary consumption, would be materially lessened, were persons in health accustomed to regulate the functions of the skin by the employment of bathing and ablutions more frequently than is generally the case. Many persons, it is true, who perhaps, never take a bath, yet enjoy good health, as the influence of habit will often enable the body to support many things that are generally prejudicial; but, on the other hand, there is no doubt that many suffer from various unpleasant sensations, and disordered states of health,

which might be prevented by the more frequent adoption of the practice.

Baths may be divided, according to their temperature, into—

Cold	. . .	below 65° F.
Cool	. . .	from 65 to 77
Tepid	. . .	„ 77 to 90
Warm	. . .	„ 90 to 98
Hot	. . .	above 98

The cold bath is generally used in warm weather, as a means of cleansing the surface, cooling the body, and of imparting tone and vigour to the system. It is in general well suited to healthy adults, and to those whose system is relaxed, without the existence of any disease. The duration of the bath must depend upon the circumstances and individual constitutions. Some persons may remain half an hour or longer in the water with impunity, provided they continue in motion. For others, a few minutes would be too long, and two or three plunges would be sufficient to induce a healthy re-action. It is not in general adapted to delicate females, to old people, or to young children; and though it has been by many considered as tending to strengthen children and weakly persons, it is more likely to

have a prejudicial effect, and several would fall a sacrifice before getting accustomed to it. In certain cases cold water is used for producing the shock or impression on the nervous system, as is daily seen in sprinkling the face of fainting persons, or of hysterical women.

Tepid and warm baths act as a sedative upon the nervous system, allaying irritation, promoting a freer action of the exhalant functions of the skin, and determining from internal organs, and thus preserving a due equilibrium of the circulation, and between the surface and internal parts. They are available at all times of the year, and are much more generally employed, as a remedial means, than the cold bath, though their employment, both in acute and chronic disease, is much more restricted in England than in several continental states.

However useful and recommendable the occasional use of the warm bath may be, a prolonged course of daily bathing would not be advisable, as it would tend to enervate and produce relaxation of the system, and would increase the susceptibility to cold ; but this is not the case with mineral waters in general, in cases to which they are adapted, or water strongly impregnated with saline particles, as the sea. A tepid bath of

common water will be of great service after much fatigue, travelling, in cases of sleeplessness, and general nervous irritability. It is also well suited to children whose skin is in a bad state, and in whom a tendency to convulsive affections exists, as also to several of the instances which I have enumerated in the preceding pages.

The hot bath, from its exciting property, is comparatively seldom employed in the practice of medicine. Some persons, however, who have an habitually cool skin and languid circulation, bear very well baths at a high temperature, and derive advantage from them. The hot bath is also sometimes advised as a revulsive measure, and in states of collapse, when the skin is cold and the powers of life are at a low ebb. Some of the continental mineral baths, as Mont D'Or, Tep-litz, &c., are used at a high temperature, with advantage, in long standing rheumatic, paralytic, and cutaneous complaints.

The vapour bath is usually taken in England while the person is standing, or seated, in an apparatus too well known to need description. Its action differs from that of the Russian or Indian baths, by the lower temperature, and by the head being excluded from the vapour, which consequently acts merely upon the surface of the

body, producing copious perspiration, whereas the former acts at the same time upon the whole pulmonary system, and is much more generally exciting. In its general effects, vapour has a very analogous operation with water baths, except that in the former the amount of sensible perspiration is much increased, and nothing is absorbed; whereas a person, after having been for a certain time in a water-bath, absorbs a greater quantity of fluid than he loses by perspiration, and would weigh heavier on coming out than previous to the bath. Vapour-baths can also be taken at a much higher temperature than water-baths, owing to their medium being less dense. They are generally preferred in cases where a greater degree of relaxation of the surface is required, as in persons of dry skin and rigid fibre, affected with long-standing rheumatic and cutaneous complaints, neuralgia, and various other diseases. The vapour of several hot mineral springs is employed as a general or local bath, and also for inhalation, but, though it may be slightly impregnated with gas, cannot have a very different operation from the vapour of common water.

The shower-bath, either cold or tepid, according to circumstances, is a valuable means of pre-

serving the health, and of fortifying the system of nervous and delicate persons. It is likewise highly advantageous in remedying certain disordered states of health, in which an ordinary bath would not be applicable; as some cerebral affections, cases of nervous irritability, with a tendency to spasmodic affections, sleeplessness, &c.

Local baths, as when the lower half or a part of the body is immersed in the water, are also of frequent use in the practice of medicine—the former, or the hip-bath, is often of great service in cases of undue determination of blood to the head and upper parts of the body, with coldness of the extremities, and also in allaying irritation of the pelvic viscera, and equalising the circulation between them and the surface. Foot-baths are also commonly used on the principle of revulsion, for the removal of colds, and slight inflammatory affections of the throat and air-passages. They, as well as hand-baths, are also very useful in febrile diseases, where the brain or the bronchial lining are congested, and when the palms of the hands and soles of the feet are hot and dry. Fomentations, which in fact, as well as poultices, are a local warm bath, may be used on such occasions.

Various fluids, as milk, broth, &c., are occasionally used as baths, for their softening or nourishing qualities. Stimulating substances, as salt, mustard, and medicinal extracts or plants, are also sometimes employed for medicating baths. It is, however, foreign to my purpose to enter into the consideration of these agents.

Cold ablutions, though generally serviceable, should be employed with some precaution, especially in very young children, who have not much re-active power. Daily sponging with cold water tends greatly to preserve the body in health, removes the disposition to catarrhal and rheumatic complaints, and prevents the accumulation of the cutaneous secretions in particular parts, which so often give rise to disease. The addition of vinegar or salt to the water is often advantageous.

It has been said that absorption takes place in the bath; the extent to which this occurs varies greatly in different individuals and from various circumstances, as for instance, when the atmospheric pressure is greater, the absorption is increased, as also by the motion and the shocks of the water upon the surface, which have an analogous effect to frictions; as regards the cutaneous exhalation, this is diminished, but not

suppressed, by the dense medium of the water; the perspiration produced by a hot-bath is not equivalent to the vaporisation from the surface of the body exposed to the air.

The substances, also, which the water holds in solution in compound or mineral baths communicate special properties to the bath, alter its physical qualities, as the density, conductivity, electric state, and consequently its effects upon the organization, acting by their stimulating the skin, as well as by their absorption.

Baths of sea-water especially, excite the skin and irritate its nervous papillæ, determining a more active circulation, and are very analogous in their action to some mineral springs containing a large quantity of muriate of soda, as Salzhauseu, Kreutznach, Ischl, and Ashby-de-la-Zouch. The quantity of saline substance varies considerably in different seas, and in the same sea at different parts, being greater at a distance from the shore and in deep water than on the surface. In cold regions near the Pole, towards which a greater quantity of humidity is carried, the sea is less salt than in warmer latitudes, as near the Equator, where the greater quantity of salt is said to be useful in preventing putrefaction. In the Baltic a pint of water contains

scarcely two scruples of salt; on the coasts of Great Britain it contains more than half an ounce; in the Mediterranean much more; and in some parts under the Line the quantity amounts to more than two ounces. Besides muriate of soda, sea-water contains muriate of magnesia, sulphate of soda, and other salts in minute proportion, as well as iodine, bromine, and animal and vegetable matter.

From the beginning of July the temperature of the sea is constantly on the increase, and during the month of August it is at the highest, remaining the same with very little alteration till September, when the temperature again becomes less. The minimum temperature of the sea for each day is in the morning before ten o'clock, its maximum from twelve to five. Other circumstances being the same, the temperature of sea-water is observed to be higher in proportion to the proximity of continents and islands.

Tepid bathing in sea-water is useful in several chronic complaints, when a slightly stimulating action on the skin and nervous system is required. The effects from absorption of the water have also to be considered. It may be continued for a long time without inducing the relaxation which is caused by frequent bathing

in common warm water, and is not unfrequently recommended as preparatory to bathing in the open sea, in which not only the stimulating effect of the saline substance is to be considered, but also the mechanical action and pressure of a large body of water, the motion of the waves, which, by their mass and the force with which they act, may be regarded as general douches, and are often not well supported by weakly persons and delicate children.

On entering the water at its natural temperature, a feeling of shivering, with slight oppression of the chest and convulsive respiration, termed the shock, is experienced, which, however, is but momentary, and passes off on immersing the whole of the body and moving about freely. After the bath, a greater or less degree of re-action ensues, indicated by a genial glow, increased redness of the surface, and a feeling of general vigour, with, in some cases, eruptions on the skin.* The object of sea-bathing is to induce this re-action, whence its tonic properties ;

* These eruptions are sometimes in the form of red patches, like those of measles, with vesicular elevations ; sometimes they have the diffused redness of scarlatina ; at other times resemble prurigo, or the spots of flea-bites ; even both are sometimes produced.

the direct action of cold having a sedative and benumbing influence, depressing the powers of life, and, when prolonged, causing the blood to retire from the surface, and congesting internal organs, thereby inducing coma, and subsequent death. Thus, it will be obvious, that the period of the cold-bath should not be too much prolonged ; and also, that a certain degree of vigour and power of re-action is requisite in those to whom the cold sea-bath is recommended. It is, consequently, not advisable for very weak or delicate subjects, old people, or those disposed to internal congestions, or hæmorrhage. The first baths mostly occasion a certain degree of general lassitude, with tendency to sleep, especially after meals. Some complain of oppression in the precordial region, of head-ache, of a tendency to tooth-ache, &c., an attack of which is frequently induced by the bath ; the uterus and breasts are more sensitive, the appetite increases, and constipation is frequently produced. These effects, however, afterwards subside.

Cold sea-bathing acts, therefore, powerfully on the nervous system, invigorating body and mind, and increases the activity of particular organs, especially the skin, the respiratory apparatus, the lymphatic glands and absorbents, and the

liver and abdominal circulation. It may be recommended in states of general languor, lassitude, and debility, either from excesses, dissipation, or tedious convalescence; where there exists a preternaturally delicate state of the skin, with susceptibility to take cold, or a relaxed state of the mucous membranes; in constitutional, general, or local debility, as of the sexual organs, and scrofula, provided there be no feverishness or other counter-indicating circumstances, and in various nervous and other affections, where a tonic medication is indicated. "Affusions of sea-water upon the head, with immersions in the sea, are highly beneficial in neuralgia of the head, obstinate headache, or hemicrania. The combination of the two modes is indispensable, for either employed separately will increase the pain, or reproduce it. An attack of neuralgia may be arrested by a sea-bath." *

Independently, however, of bathing, a residence at the sea-side is beneficial in several states of disordered health, as dyspepsia, bronchial affections, a disposition to consumption or scrofula, increased nervous susceptibility, as in hysterical and other nervous affections (which are less prevalent on the coast than in the interior), the

* Gaudet. Effets Physiologiques des Bains de Mer.

sea-air being not only comparatively free from fogs and vapour, but also strongly impregnated with saline particles, which tend materially to impart tone to the system, as is evident from the strong constitutions and good appetite generally enjoyed by sailors and residents on the coast.

APPENDIX.

TABLES OF ANALYSIS.

CONTENTS OF A PINT OF WATER.

CABLSBAD.

Analysis of the Sprudel by Berzelius.

	In 16 of water.
Carbonate of soda	0·69500
Muriate	7·97583
Sulphate	19·86916
Carbonate of lime	10·05005
Fluate	0·02458
Phosphate	0·00169
Carb. strontian	0·00737
Earthy phosphate	0·00246
Silex	0·57715
Carbonate of iron	0·02780
Carbonate of manganese	0 00645
<hr/>	
Grains	49·60719
Carbonic acid, cubic inches	11·850

EMS.

(According to Jung's Analysis.)

KESSELBRUNNEN.		KRANCHENBRUNNEN.	
Temperature 115 F.		Temperature 90 F.	
	Grains.		Grains.
Carbonate of soda .	14·7418	.	12·6108
Muriate of soda .	7·0210	.	6·3349
Carbonate of lime .	1·1474	.	1·4400
Carbonate of magnesia	0·3200	.	0·4975
Muriate of magnesia	0·3318	.	0·3758
Sulphate of soda .	0·3538	.	0·3981
Oxide of iron .	0·0594	.	0·0095
Silex . . .	0·3684	.	0·3842
Carbonic acid gas, 12·913.—20·340 cubic inches.			

VICHY.

Amount of substance contained in a gallon of water from the Grande Grille:—

Carbonate of lime . . .	14·91
Carbonate of magnesia . .	2·78
Carbonate of iron . . .	0·74
Carbonate of soda . . .	320·46
Sulphate of soda . . .	51·57
Muriate of soda . . .	21·17

411·63

Carbonic acid, 136 cubic inches.

Vichy contains more soda and carbonic acid than any other alkaline thermal water.

SPA.

	Pouhon.	Geronstère.
Carbonate of lime	9·87	5·20
Carbonate of soda	2 25	1·43
Oxide of Iron	5·24	0·94
Muriate of soda	1·16	0·64
Silex	2·26	1·40
<hr/>		
Grains	26·8	12·50
Carbonic acid, cubic inches	20·2	16·8
Minute portion of sulphate of soda, alumina, etc.		

SELTERS.

(According to Kastner.)

	Grains.
Muriate of soda	17·2285
Carbonate of soda	6·1575
Carbonate of lime	1·8573
Carbonate of magnesia	1·6875
Sulphate of soda	0·2615
Phosphate of soda	0·2775
Oxide of iron	0·0785
Silex	0·1500
<hr/>	
Carbonic acid gas	28·48 cubic inches.

HOMBURG.

(*The Kurbrunnen, according to Liebig.*)

Muriate of soda	.	.	79·1548
Sulphate of soda	.	.	0·3815
Muriate of lime	.	.	7·7590
Muriate of magnesia	.	.	7·7919
Silex	.	.	0·3158
Carbonate of lime	.	.	10·9905
Carbonate of magnesia	.	.	2·0136
Oxide of iron	.	.	0·4623

108·8815 grains.

Carbonic acid gas, 48·64 inches.

MARIENBAD.

In sixteen ounces of water, according to Berzelius.

	Kreutzb.	Ferdinandsb.	Carolinenb.
Sulphate of soda	35·733	21·128	3·141
Muriate	12·716	8·433	0·671
Carbonate	9·616	8·061	0·873
Carbonate of lime	3·686	3·765	1·030
Carbonate of magnesia	2·548	2·858	3·676
Carbonate of iron	0·165	0·357	0·435
Carbonate of strontian	0·087	0·005	—
Manganese	0·035	0·086	—
Lithion	0·107	0·063	—
Earthy phosphate	0·025	0·053	—
Silex	0·363	0·622	0·236
<hr/>			
Grains	64·975	45·000	10·210
Carbonic acid gas, } cubic inches	8·384	13·736	12·000

KREUTZNACH.

Analysed by Osann.

Iodate of soda	0·0440
Bromate of lime	6·6025
Muriate of magnesia . . .	1·3672
Muriate of soda	59·6651
Muriate of magnesia . . .	0·6786
Muriate of lime	2·5612
Muriate of potass	0·4017
Muriate of lithia	0·0566
Muriate of alumina	0·4321
Muriate of manganese . . .	0·6538
Carbonate of lime	0·6133
Carbonate of magnesia . . .	0·4730
Carbonate of iron	0·3645
Silex	0·0313
Resinous matter	1·4717
<hr/>	
Grains	75·5220
Carbonic acid gas	3·98
Azote and oxygen	93
<hr/>	
Cubic inches	4·91

KISSINGEN.

*A Pint of Water from the Ragozzibrunnen, analysed
by Kastner, yielded*

	Grains.
Muriate of soda . . .	62·05
Muriate of magnesia . . .	6·85
Muriate of potass . . .	0·91
Carbonate of lime . . .	3·55
Carbonate of soda . . .	0·82
Carbonate of magnesia . . .	2·50
Sulphate of soda . . .	2·00
Oxide of iron . . .	2·55
Iron . . .	0·63

Carbonic acid gas . 26·25 cubic inches.

With minute proportions of phosphate of soda, earthy and animal matter; and traces of iodine, manganese, and lithion.

SAIDSCHUTZ AND PULNA.

	SAIDSCHUTZ. (Berzelius)	PULLNA. (Ficinus)	PULLNA. (Struve)
Sulphate magnesia .	81·1660	95·975	23·086
Nitrate magnesia .	25·1715	4·602	—
Carbonate magnesia	4·9858	2·280	6·466
Muriate magnesia .	2·1696	19·120	19·666
Sulphate potass . .	4·0965	82·720	4·800
Sulphate soda . . .	46·8091	10·125	123·800
Sulphate of lime . .	10·0076	0·800	2·600

Grains . . . 178 222 254

Carbonate of lime, iron, manganese, silix, etc., small portions.

The total is here stated without the fractions of grains; the table being principally given to show the proportion of the aperient salts in these two waters, and discrepancy between the analyses of Ficinus and Struve.

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“A very complete exposition of the medical institutions of the three nations. The author is well known to most of our readers from the numerous publications with which he has enriched science. His profound and at the same time varied knowledge, his frequent visits to different parts of the continent, and the protracted residence which he has made in many of them, impart to most of his judgments a justness of appreciation, and a character of truthfulness rarely met with.”—*Gazette Médicale de Paris*.

* These notices are considerably curtailed. Many other highly favorable ones from metropolitan Journals, and all those which appeared in the provincial papers, are omitted, not from any disregard, but in order not to lengthen out the present list.

Mr. Lee's Works,

"The principal points (especially as respects the Paris hospitals) are described with great accuracy. In the parallel between English and foreign medicine the impartial appreciation and the sound judgment displayed reflect great honour upon the author."—*Schmidt's Jahrbucher der Medicin.*

COUP D'ŒIL sur les **HOPITAUX DE LONDRES**, et sur l'Etat Actuel de la Médecine et de la Chirurgie en Angleterre. (Pamphlet.)

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"This part of his work, which Mr. Lee has devoted to their consideration, appears to us to be the most complete treatise existing on the subject."—*Gazette Médicale.*

"Mr. Lee's work is of a practical nature, and worthy of attention."—*Medico-Chirurgical Review.*

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"An excellent manual of all the facts relating to lithority."—*Dublin Journal of Medical Science.*

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"An excellent treatise on Stammering and Squinting."—*Graefe and Walthers Journal für Chirurgie.*

"We can recommend the work as by much the completest and best published on the subject in this country."—*British and Foreign Medical Review.*

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